

INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM  
QUESTIONNAIRE FOR THE STATE OF TEXAS

Reporting Period: February 10, 2018 – March 4, 2022

Note: If there has been no change in the response to a specific question since the last IMPEP questionnaire, the State or Region may copy the previous answer, if appropriate.

A. GENERAL

1. Please prepare a summary of the status of the State's or Region's actions taken in response to each of the open recommendations from previous IMPEP reviews.

B. COMMON PERFORMANCE INDICATORS

I. Technical Staffing and Training

2. Please provide the following organization charts, including names and positions:

(a) A chart showing positions from the Governor down to the Radiation Control Program Director;  
  
See Appendix B-1

(b) A chart showing positions of the radiation control program, including management; and  
  
See Appendix B-2

(c) Equivalent charts for sealed source and device evaluation, low-level radioactive waste and uranium recovery programs, if applicable.  
  
See Appendix B-3
3. Please provide a staffing plan, or complete a listing using the suggested format below, of the professional (technical) full-time equivalents (FTE) applied to the radioactive materials program by individual. Include the name, position, and, for Agreement States, the fraction of time spent in the following areas: administration, materials licensing & compliance, emergency response, low-level radioactive waste, uranium recovery, other. If these regulatory responsibilities are divided between offices, the table should be consolidated to include all personnel contributing to the radioactive materials program.  
  
If consultants were used to carry out the program's radioactive materials responsibilities, include their efforts. The table heading should be:

<u>Name</u>	<u>Position</u>	<u>Area of Effort</u>	<u>FTE%</u>
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See Appendix B-4
4. Please provide a listing of all new professional personnel hired into your radioactive materials program since the last review, indicate the date of hire; the degree(s) they received, if applicable; additional training; and years of experience in health physics or other disciplines, as appropriate.  
  
See Appendix B-5
5. Please list all professional staff who have not yet met the qualification requirements for a radioactive materials license reviewer or inspector. For each, list the courses or equivalent training/experience they need and a tentative schedule for completion of these requirements.  
  
See Appendix B-6

6. Identify any changes to your qualification and training procedure that occurred during the review period.

**The qualifications for new license reviewers were modified by expanding the detail of the types of licenses that the reviewers need to complete for the On-The-Job signoffs. The types of licenses were tailored for the industrial and medical/academic programs to address all the types of licenses that that group processes. This has extended the initial qualification timeframe from approximately 9 months to approximately 18 months.**

**There were no changes to the inspector qualification and training program.**

**SS&D: We changed the training procedure but have not applied it yet. New SS&D reviewers have an in-house review of the SS&D workshop training to count towards SS&D reviewer qualification before attending the NRC-sponsored SS&D workshop. The in-house SS&D workshop training will use past NRC workshop training materials with current SS&D reviewers as presenters of the information.**

7. Please identify the technical staff that left your radioactive materials program during the review period and indicate the date they left.

**See Appendix B-7**

8. List any vacant positions in your radioactive materials program, the length of time each position has been vacant, and a brief summary of efforts to fill the vacancy.

**See Appendix B-8**

9. For Agreement States, does your program have an oversight board or committee which provides direction to the program and is composed of licensees and/or members of the public? If so, please describe the procedures used to avoid any potential conflict of interest.

**The Texas Radiation Advisory Board (TRAB) is an 18-member, governor-appointed advisory board mandated by statute (Health and Safety Code, Chapter 401). Representation on the board is specified in statute and includes:**

- a representative of nuclear physics, science, or nuclear engineering;**
- a representative of labor;**
- a representative of agriculture;**
- a representative of the insurance industry;**
- a hospital administrator;**
- a representative who is engaged in the use and application of nuclear physics in medicine and is certified by the American Board of Radiology or licensed by the Texas Board of Licensure for Professional Medical Physicists;**
- an individual licensed by the Texas Medical Board who specializes in nuclear medicine;**
- an individual licensed by the Texas Medical Board who specializes in pathology;**
- an individual licensed by the Texas Medical Board who specializes in radiology;**
- a representative of the nuclear utility industry;**
- a representative of the radioactive waste industry;**
- a representative of the petroleum industry;**
- a health physicist certified by the American Board of Health Physics;**
- an individual licensed by the Texas Dental Board;**
- a representative of the uranium mining industry; and**
- three representatives of the public.**

**TRAB provides recommendations and technical advice on matters relating to development, use, and regulation of sources of radiation to the three agencies with regulatory responsibility for radiation, DSHS, TCEQ and the Railroad Commission of Texas. Chapter 401 specifies the circumstances under which a person would not be eligible to serve on TRAB to avoid conflict of interest. The statute further requires that each TRAB member receive training in the appropriate statutes and rules, including conflict of interest laws. Chapter 289.130 contains rules governing the TRAB and its actions.**

**See Appendix B-9 for a list of current TRAB members.**

II. Status of Materials Inspection Program

10. Please identify individual licensees or categories of licensees the State is inspecting less frequently than called for in NRC’s Inspection Manual Chapter (IMC) 2800 and explain the reason for the difference. The list only needs to include the following information: license category or licensee name and license number, your inspection interval, and rationale for the difference.

**All categories of licensees are inspected at either the same frequency as NRC, or more frequently.**

**See Appendix B-10 for a list of the inspection intervals by modifier type.**

11. Please provide the number of routine inspections of Priority 1, 2, and 3 licensees, as defined in IMC 2800 and the number of initial inspections that were completed during each year of the review period.

**For inspection period 2/10/2018 through 12/31/2021:**

	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>Total</u>
<b>Priority 1</b>	43	51	56	74	<b>224</b>
<b>Priority 2</b>	49	78	52	95	<b>274</b>
<b>Priority 3</b>	107	84	97	74	<b>362</b>
<b>Initial</b>	46	68	58	56	<b>228</b>
<b>Totals</b>	<b>245</b>	<b>281</b>	<b>263</b>	<b>299</b>	<b>1088</b>

12. Please submit a table, or a computer printout, that identifies inspections of Priority 1, 2, and 3 licensees and initial inspections that were conducted overdue.

At a minimum, the list should include the following information for each inspection that was conducted overdue during the review period:

- (1) Licensee Name
- (2) License Number
- (3) Priority (IMC 2800)
- (4) Last inspection date or license issuance date, if initial inspection
- (5) Date Due
- (6) Date Performed
- (7) Amount of Time Overdue
- (8) Date inspection findings issued

**See Appendix B-11 for Priority 1-3 inspections conducted overdue**  
**See Appendix B-12 for initial inspections conducted overdue**

13. Please submit a table or computer printout that identifies any Priority 1, 2, and 3 licensees-and initial inspections that are currently overdue, per IMC 2800. At a minimum, the list should include the same information for each overdue inspection provided for Question 12 plus your action plan for completing the inspection. Also include your plan for completing the overdue inspections.

**There are currently no overdue inspections.**

14. Please provide the number of reciprocity licensees that were candidates for inspection per year as described in IMC 1220 and indicate the number of reciprocity inspections of candidate licensees that were completed each year during the review period.

	<b># of Companies</b>	<b># of Inspections</b>	<b>% Inspected</b>
<b>2018</b>	<b>22</b>	<b>5</b>	<b>22.7%</b>
<b>2019</b>	<b>37</b>	<b>12</b>	<b>32.4%</b>
<b>2020</b>	<b>19</b>	<b>5</b>	<b>26.3%</b>
<b>2021</b>	<b>35</b>	<b>9</b>	<b>25.7%</b>

III. Technical Quality of Inspections

15. What, if any, changes were made to your written inspection procedures during the reporting period?

**The Texas Inspection manual is being modified to be equivalent to the NRC Chapter 2800, including the updated reciprocity procedure and appropriate adaptations for the Texas Program. Inspection guidance and report forms remain essentially the same, with minor improvements made as needed.**

**We have developed and implemented several information notices for licensees and enforcement notices for internal use. The Radioactive Materials Information Notice was developed as a collection of periodic notifications as important topics arise regarding inspection procedure, enforcement policy, rule clarification, administrative procedure, and essential information and this document serves as official guidance for performing inspections, training, and administrative tasks.**

**All useful information contained in the Work Instruction documents is being incorporated into either the updated inspection manual or the radioactive materials group information notice. Once this task is completed, the Work Instruction documents will be retired.**

**Once the draft NRC Inspection Procedures are final, we plan to incorporate them into our inspection procedures, possibly by reference or by creating essentially equivalent procedures with adaptations to make them unique to the Texas Program.**

16. Prepare a table showing the number and types of supervisory accompaniments made during the review period. Include:

<u>Inspector</u>	<u>Supervisor</u>	<u>License Category</u>	<u>Date</u>
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**See Appendix B-13**

17. Describe or provide an update on your instrumentation, methods of calibration, and laboratory capabilities. Are all instruments properly calibrated at the present time? Were there sufficient calibrated instruments available throughout the review period?

**The radioactive materials inspectors are provided with the following instruments at a minimum:**

- Ludlum 2241 with a 1x1 scintillation probe, an energy compensated G/M probe, a G/M pancake probe, and a low energy gamma probe**
- Thermo Scientific RadEye SPRD-GN spectroscopic Personal Radiation Detector**
- Ludlum 2363 with 42-41L neutron probe**
- BNC model 940 radiation isotope identifier**

**See Appendix B-14 for Instrument Calibration Status**  
**See Appendix B-15 for Calibration Procedures**

IV. Technical Quality of Licensing Actions

18. How many specific radioactive material licenses does your program regulate at this time?

**As of 1/18/2022:**

**Medical Licenses: 703**  
**Industrial Licenses: 639**  
**Advanced Technology Licenses: 49**  
**RAM Reciprocity: 89**

**88 SS&D were issued during the review period**

19. Please identify any major, unusual, or complex licenses which were issued, received a major amendment, were terminated, decommissioned, submitted a bankruptcy notification or renewed in this period.

**See Appendix B-16**

20. Discuss any variances in licensing policies and procedures or exemptions from the regulations granted during the review period.

**The RAM Licensing Unit migrated to using electronic document handling and storage in SharePoint instead of processing hardcopy applications and archiving hardcopy files on microfiche. Starting in August 2019, the RAM Licensing unit began dual use of electronic and paper file handling and then converted to electronic files only in December 2019 of new incoming requests.**

**The changes to the licensing procedures include the following:**

- **Starting July/August 2020, we began to use digital signatures on licenses.**
- **Starting Sept/Oct 2020, we began to deliver electronic copies of licenses via secure email. A follow-up letter is sent via regular mail to the licensee contact person advising them that an electronic copy was sent.**
- **Starting October 2020, we modified the handling of transfer of control applications to give a prior review and approval of the transfer of control. With the review we also determine whether a new license or license amendment is appropriate for the particular action.**

**The RAM Licensing Unit uses a rule exemption process prior to deviating from rule requirements that includes review and approval by management. The exemptions are classified as specific for a specific licensee, or generic for all applicable licensees. The exemptions granted during the review period for radioactive materials licenses are listed below.**

- **E18-01 - rule 25 TAC §289.255(u)(4)(B) - permitted storage of radiography camera at a residential location (in separate building on the owner's property) for a specific licensee**
- **E19-02 - rule §289.255(u)(4)(B) - permitted storage of radiography camera at a residential location (in separate building on the owner's property) for a specific licensee**
- **E19-03 - rule 25 TAC §289.255(u)(4)(B) - permitted storage of radiography camera at a residential location (in separate building on the owner's property) for a specific licensee**
- **E20-01 - rule 25 TAC §289.255(e)(4)(B)(i) - permitted an individual to be a radiography RSO while completing his GED for a specific licensee**
- **E20-02 - rule 25 TAC §289.255(u)(4)(B) - permitted storage of radiography camera at a residential location (in separate building on the owner's property) for a specific licensee**
- **Generic exemption L020 (5-4-21) - rules 25 TAC §289.256(h), (j), (k), (l), (gg), (jj), (nn), (oo), (pp), (qq), (zz), (aaa), and (ttt) - permitted reviewer acceptance of licensee using NRC training and experience criteria for AU for medical licensees**

21. What, if any, changes were made in your written licensing procedures (new procedures, updates, policy memoranda, etc.) during the reporting period?

**The changes made to the licensing program documentation during the review period include:**

- **Updating the RSRM review form to match NRC changes**
- **Updating the Pre-Licensing guidance to match NRC changes**
- **Generated internal procedures on entering license actions into the database and our SharePoint site by license reviewers as we move to electronic handling of documents.**
- **The Medical Licensing guidance document was updated in November 2018 to be consistent with NRC NUREG 1556 Volume 9 while still operating under the old medical rules.**
- **The Portable Gauge licensing guidance was updated in March 2021 to be consistent with NRC NUREG Volume 1**

**The revision to our rules effective January 4, 2022, incorporated changes to be more consistent with the NRC language and compatibility D regulations. We intend to incorporate these changes by referencing many NRC NUREG guidance documents.**

**Changes to licensing procedures that have not been consolidated into formal procedures are listed above as policy and procedure variances.**

22. Identify by licensee name and license number any renewal applications that have been pending for one year or more. Please indicate why these reviews have been delayed and describe your action plan to reduce the backlog.

**License number L05278 for IIA Nuclear Services Inc expired September 30, 2020 and has been in renewal for more than one year. The licensee has had complications with completing the revision to their decommissioning cost estimate. The renewal will be completed when we have received and approved the revised Decommissioning Funding Plan.**

V. Technical Quality of Incident and Allegation Activities

23. For Agreement States, please provide a list of any reportable incidents not previously submitted to NRC (See Procedure SA-300, *Reporting Material Events*, for additional guidance, OMB clearance number 3150-0178). The list should be in the following format:

<u>Licensee Name</u>	<u>License #</u>	<u>Date of Incident/Report</u>	<u>Type of Incident</u>
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**No additional events to report**

24. Identify any changes to your procedures for responding to incidents and allegations that occurred during the period of this review.

**The Incident Investigation Program procedure was changed to meet the reporting requirements of Texas Health and Safety Code, 501.0245. This requires the program to report certain events to local authorities as well as some emergency response groups.**

C. **NON-COMMON PERFORMANCE INDICATORS**

I. Compatibility Requirements

25. Please list all currently effective legislation that affects the radiation control program. Denote any legislation that was enacted or amended during the review period.

**House Bill 2203, 86<sup>th</sup> Legislature, Regular Session (2019) added Section 501.0245 requiring the notification of each affected political subdivision of the state when a state agency received a required report of a release of a radioactive substance.**

**House Bill 7, 87<sup>th</sup> Legislature, Special Session 2 (2021) amended Section 401.003 of the Health and Safety Code to forbid the approval of a general construction permit or a Stormwater Pollution Prevention Plan under Section 26.040, Water Code, or a permit under the Texas Pollutant Discharge Elimination System Program under Section 26.027, 26.028, or 26.121, Water Code, for the construction or operation of a facility that is licensed for the storage of high-level radioactive waste by the United States Nuclear Regulatory Commission under 10 C.F.R. Part 72. Exceptions were given to facilities located at the site of currently or formerly operating nuclear power reactors and currently or formerly operating nuclear research and test reactors operated by a university.**

26. Are your regulations subject to a "Sunset" or equivalent law? If so, explain and include the next expiration date for your regulations.

**Government Code, Chapter 2001.039 requires Texas state agencies to assess whether the reasons for adopting each rule continue to exist and to review each rule to determine whether it is obsolete, whether it reflects current legal and policy considerations, and whether it reflects current procedures of the agency. As a part of this review, each agency is required to submit notice of intent to the Texas Register for publication. Each rule is required to be reviewed four years from the last effective date of the rule. Therefore, each section of 25 Texas Administrative Code, Chapter 289 (radiation control rules) has a different four-year review interval.**

27. Please review and verify that the information in the enclosed State Regulation Status (SRS) sheet is correct. For those regulations that have not been adopted by the State, explain why they were not adopted, and discuss actions being taken to adopt them. If legally binding requirements were used in lieu of regulations and they have not been reviewed by NRC for compatibility, please describe their use.

**See Appendix C-1**

28. If you have not adopted all amendments within three years from the date of NRC rule promulgation, briefly describe your State's procedures for amending regulations in order to maintain compatibility with the NRC, showing the normal length of time anticipated to complete each step.

**Texas is compatible with all applicable NRC regulations.**

II. Sealed Source and Device (SS&D) Evaluation Program

29. Prepare a table listing new and amended (including transfers to inactive status) SS&D registrations of sources and devices issued during the review period. The table heading should be:

<u>SS&amp;D Registry Number</u>	<u>Manufacturer, Distributor or Custom User</u>	<u>Product Type or Use</u>	<u>Date Issued</u>	<u>Type of Action</u>
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**See Appendix C-2**

30. Please include information on the following questions in Section A, as they apply to the SS&D Program:

**All applicable SS&D information answered above**

Technical Staffing and Training - Questions 2-9  
Technical Quality of Licensing Actions - Questions 18-22  
Technical Quality of Incident and Allegation Activities - Questions 23-24

III. Low-level Radioactive Waste Disposal Program

31. Please include information on the following questions in Section A, as they apply to the Low-Level Radioactive Waste Disposal Program:

Technical Staffing and Training - Questions 2-9  
Status of Materials Inspection Program - Questions 10-14  
Technical Quality of Inspections - Questions 15-17  
Technical Quality of Licensing Actions - Questions 18-22  
Technical Quality of Incident and Allegation Activities - Questions 23-24

IV. Uranium Recovery Program

32. Please include information on the following questions in Section A, as they apply to the Uranium Recovery Program:

Technical Staffing and Training - Questions 2-9  
Status of Materials Inspection Program - Questions 10-14  
Technical Quality of Inspections - Questions 15-17  
Technical Quality of Licensing Actions - Questions 18-22  
Technical Quality of Incident and Allegation Activities - Questions 23-24

## MATERIALS REQUESTED TO BE AVAILABLE FOR THE ON-SITE PORTION OF AN IMPEP REVIEW

Please have the following information available for use by the IMPEP review team when they arrive at your office:

- List of open license cases, with date of original request, and dates of follow-up actions.
- List of licenses terminated during review period.
- Copy of current log or other document used to track licensing actions.
- List of all licensing actions completed during the review period (sorted by license reviewer, if possible).
- Copy of current log or other document used to track inspections.
- List of all inspections completed during the review period (sorted by inspector, if possible).
- List of inspection frequencies by license type.
- List of all allegations occurring during the review period. Show whether the allegation is open or closed and whether it was referred by NRC.
- List of all licenses that your agency has imposed additional security requirements upon.

### ALSO, PLEASE HAVE THE FOLLOWING DOCUMENTS AVAILABLE:

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|---|--|
| • All State regulations   | • Documented training plan, if applicable  |
| • Statutes affecting the regulatory authority of the State program  | • Records of results of supervisory accompaniments of inspectors   |
| • Standard license conditions                                       | • Emergency plan and communications list   |
| • Technical procedures for licensing, model licenses, review guides | • Procedures for investigating allegations   |
| • SS&D review procedures, guides, and standards                     | • Procedures for investigating incidents   |
| • Instrument calibration records                                    | • Enforcement procedures, including procedures for escalated enforcement, severity levels, civil penalties (as applicable) |
| • Inspection procedures and guides                                  | • Job descriptions   |
| • Inspection report forms   |  |

# STATE REGULATION STATUS

State: **Texas Department of State Health Services**

Tracking Ticket Number: 21-36

Date: July 29, 2021

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1991-1	Safety Requirements for Radiographic Equipment Part 34 55 FR 843 (Superceded by 1997-5)	01/10/1994	Final ML051520266	No Comments 10/31/2005 ML053050013	Texas has adopted Final Regulations equivalent to RATS ID: 1997-5.
1991-2	ASNT Certification of Radiographers Part 34 56 FR 11504 (Superceded by 1997-5)	none	Not Required	Not Required	Texas has adopted Final Regulations equivalent to RATS ID: 1997-5.
1991-3	Standards for Protection Against Radiation Part 20 56 FR 23360; 56 FR 61352; 57 FR 38588; 57 FR 57877; 58 FR 67657; 59 FR 41641; 60 FR 20183;	01/01/1994	Final	No Comments 11/06/1997	
1991-4	Notification of Incidents Parts 20, 30, 31, 34, 39, 40, 70 56 FR 64980;	10/15/1994	Final ML052060129	No Comments 09/29/2005 ML052720491	
1992-1	Quality Management Program and Misadministrations Part 35 56 FR 34104 (Superceded by 2002-2)	01/27/1995	Not Required	Not Required	Texas has adopted Final Regulations equivalent to RATS ID: 2002-2.
1992-2	Eliminating the Recordkeeping Requirements for Departures from Manufacturer's Instructions Parts 30, 35 57 FR 45566	none	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1993-1	Decommissioning Recordkeeping and License Termination: Documentation Additions [Restricted areas and spill sites] Parts 30, 40 58 FR 39628	10/25/1996	Final ML052060129  Revised Final ML18234A459	Comments 09/29/2005 ML052720491  No Comments 10/16/2018 ML18234A448	
1993-2	Licensing and Radiation Safety Requirements for Irradiators Part 36 58 FR 7715	07/01/1996	Final ML051520266	No Comments 08/12/2005 ML052280032	
1993-3	Definition of Land Disposal and Waste Site QA Program Part 61 58 FR 33886	07/22/1996	Not Applicable	Not Applicable	Texas DSHS does not have responsibility for these regulations. See SRS sheet for Texas CEQ.
1994-1	Self-Guarantee as an Additional Financial Mechanism Parts 30, 40, 70 58 FR 68726; 59 FR 1618	none	Final ML062860025	No Comments 11/21/2006 ML063200232	These regulation changes are not required to be adopted for purposes of Compatibility.
1994-2	Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards Part 40 59 FR 28220	07/01/1997	Not Applicable	Not Applicable	Texas CEQ Responsibility
1994-3	Timeliness in Decommissioning Material Facilities Parts 30, 40, 70 59 FR 36026	08/15/1997	Final ML052060129	No Comments 09/29/2005 ML052720491	
1995-1	Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use Parts 30, 32, 35 59 FR 61767; 59 FR 65243; 60 FR 322	01/01/1998	Final	No Comments 03/17/1999	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1995-2	Frequency of Medical Examinations for Use of Respiratory Protection Equipment Part 20 60 FR 7900	03/13/1998	Final ML051520266	No Comments 10/31/2005 ML053050013	
1995-3	Low-Level Waste Shipment Manifest Information and Reporting Parts 20, 61 60 FR 15649; 60 FR 25983	03/01/1998	Final ML112510357	No Comments 11/22/2011 ML113000228	
1995-4	Performance Requirements for Radiography Equipment Part 34 60 FR 28323 <b>(Superceded by 1997-5)</b>	06/30/1998	Final ML051520266	No Comments 10/31/2005 ML053050013	Texas has adopted Final Regulations equivalent to RATS ID: 1997-5.
1995-5	Radiation Protection Requirements: Amended Definitions and Criteria Parts 19, 20 60 FR 36038	08/14/1998	Final	No Comments 03/17/1999	
1995-6	Clarification of Decommissioning Funding Requirements Parts 30, 40, 70 60 FR 38235	11/24/1998	Final ML052060129	No Comments 09/29/2005 ML052720491	
1995-7	Medical Administration of Radiation and Radioactive Materials Parts 20, 35 60 FR 48623 <b>(Superceded by 2002-2 and 2005-2)</b>	10/20/1998	Final ML051520266	No Comments 10/31/2005 ML053050013	Texas has not yet adopted Final Regulations equivalent to RATS ID: 2005-2.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1996-1	Compatibility with the International Atomic Energy Agency Part 71 60 FR 50248; 61 FR 28724 <b>(Superceded by 2004-1)</b>	04/01/1999	Final ML052060129	Comments 09/29/2005 ML052720491	Texas has adopted Final Regulations equivalent to RATS ID: 2004-1.
1996-2	One Time Extension of Certain Byproduct, Source and Special Nuclear Materials Licenses Parts 30, 40, 70 61 FR 1109	02/15/1999	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1996-3	Termination or Transfer of Licensed Activities: Record keeping Requirements Parts 20, 30, 40, 61, 70 61 FR 24669	06/17/1999	Final ML062860025	No Comments 11/21/2006 ML063200232	Part 30 only. Part 61 applies to TXCEQ.
1997-1	Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials; Clean Air Act Part 20 61 FR 65120	01/9/2000	Final	No Comments 07/07/2000	
1997-2	Recognition of Agreement State Licenses in Areas Under Exclusive Federal Jurisdiction Within an Agreement State Part 150 62 FR 1662	02/27/2000	Final ML063030232	No Comments 11/27/2006 ML063200389	
1997-3	Criteria for the Release of Individuals Administered Radioactive Material Parts 20, 35 62 FR 4120	05/29/2000	Final	No Comments 07/07/2000	
1997-4	Fissile Material Shipments and Exemptions Part 71 62 FR 5907 <b>(Superceded by 2004-1)</b>	02/10/2000	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility. (See STP-97-078)

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1997-5	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiography Operations Parts 30, 34, 71, 150 62 FR 28947	06/27/2000	Final	No Comments 07/07/2000	
1997-6	Radiological Criteria for License Termination Parts 20, 30, 40, 70 62 FR 39057	08/20/2000	Final	No Comments 07/07/2000	
1997-7	Exempt Distribution of a Radioactive Drug Containing One Micro curie of Carbon-14 Urea Part 30 62 FR 63634	01/02/2001	Final ML052060129	No Comments 09/29/2005 ML052720491	
1998-1	Deliberate Misconduct by Unlicensed Persons Parts 30, 40, 61, 70, 71, 150 63 FR 1890; 63 FR 13773	02/12/2001	Final ML063030232	No Comments 11/27/2006 ML063200389	
1998-2	Self-Guarantee of Decommissioning Funding by Nonprofit and Non-Bond-Issuing Licensees Parts 30, 40, 70 63 FR 29535	07/01/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1998-3	License Term for Medical Use Licenses Part 35 63 FR 31604 <b>(Superseded by 2002-2)</b>	07/10/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility. (See STP-98-074)  Texas has adopted Final Regulations equivalent to RATS ID: 2002-2.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1998-4	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations Part 34 63 FR 37059	07/09/2001	Final ML093110052	No Comments 01/21/2010 ML093520035	
1998-5	Minor Corrections, Clarifying Changes, and a Minor Policy Change Parts 20, 32, 35, 36, 39 63 FR 39477; 63 FR 45393	10/26/2001	Final	No Comments 07/07/2000	
1998-6	Transfer for Disposal and Manifests: Minor Technical Conforming Amendment Part 20 63 FR 50127	11/20/2001	Final	No Comments 07/07/2000	
1999-1	Radiological Criteria for License Termination of Uranium Recovery Facilities Part 40 64 FR 17506	06/11/2002	Not Applicable	Not Applicable	Texas CEQ Responsibility
1999-2	Requirements for Those Who Possess Certain Industrial Devices Containing Byproduct Material to Provide Requested Information Part 31 64 FR 42269	10/04/2002	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1999-3	Respiratory Protection and Controls to Restrict Internal Exposure Part 20 64 FR 54543; 64 FR 55524	02/02/2003	Final ML062750348	No Comments 11/21/2006 ML063200232	
2000-1	Energy Compensation Sources for Well Logging and Other Regulatory Clarifications Part 39 65 FR 20337	05/17/2003	Final ML051520266	No Comments 11/30/2006 ML063340007	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2000-2	New Dosimetry Technology Parts 34, 36, 39 65 FR 63750	01/08/2004	Final ML093110052	No Comments 01/21/2010 ML093520035	
2001-1	Requirements for Certain Generally Licensed Industrial Devices Containing Byproduct Material Parts 30, 31, 32 65 FR 79162	02/16/2004	Final ML120650638	No Comments 04/02/2012 ML120660270	Note: See RATS ID 2012-1 for the changes of compatibility review.
2002-1	Revision of the Skin Dose Limit Part 20 67 FR 16298	04/05/2005	Final ML102240370	No Comments 11/19/2010 ML102740009	
2002-2	Medical Use of Byproduct Material Parts 20, 32, 35 67 FR 20249	10/24/2005	R <sup>1</sup> ML14258B117  Final ML15078A299	Comments 12/16/2014 ML14258A158  No Comments 05/26/2015 ML15078A285	
2003-1	Financial Assurance for Materials Licensees Parts 30, 40, 70 68 FR 57327	12/03/2006	Final ML112510357	No Comments 11/22/2011 ML113000228	
2004-1	Compatibility with IAEA Transportation Safety Standards and Other Transportation Safety Amendments Part 71 69 FR 3697	10/01/2007	R <sup>1</sup> ML14258B117  Final ML15078A299	No Comments 12/16/2014 ML14258A158  No Comments 05/26/2015 ML15078A285	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2005-1	Security Requirements for Portable Gauges Containing Byproduct Material Part 30 70 FR 2001	07/11/2008	Final ML093110052	No Comments 01/21/2010 ML093520035	
2005-2	Medical Use of Byproduct Material - Recognition of Specialty Boards Part 35 70 FR 16336; 71 FR 1926	04/29/2008	R <sup>1</sup> ML14258B117  Final ML15078A299	No Comments 12/16/2014 ML14258A158  No Comments 05/26/2015 ML15078A285	
2005-3	Increased Controls for Risk-Significant Radioactive Sources (NRC Order EA-05-090) 70 FR 72128	12/01/2005	License Condition ML052240226	No Comments 12/12/2005 ML053420404	
2006-1	Minor Amendments Parts 20, 30, 32, 35, 40 and 70 71 FR 15005	03/27/2009	R <sup>1</sup> ML14258B117  Final ML15078A299	Comments 12/16/2014 ML14258A158  No Comments 05/26/2015 ML15078A285	
2006-2	National Source Tracking System - Serialization Requirements Part 32 with reference to Part 20 Appendix E 71 FR 65685	02/06/2007	Final ML093110052	No Comments 01/21/2010 ML093520035	
2006-3	National Source Tracking System Part 20 71 FR 65685, 72 FR 59162	01/31/2009	Final ML093110052	No Comments 01/21/2010 ML093520035	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2007-1	Medical Use of Byproduct Material - Minor Corrections and Clarifications Parts 32 and 35 72 FR 45147, 54207	10/29/2010	Final ML102240370	No Comments 11/19/2010 ML102740009	
2007-2	Exemptions from Licensing, General Licenses, and Distribution of Byproduct Material: Licensing and Reporting Requirements Parts 30, 31, 32, 150 72 FR 58473	12/17/2010	Final ML15078A299  Revised Final ML15300A187  Revised Final ML16076A353  Revised Final ML18234A459	Comments 05/26/2015 ML15078A285  No Comments 02/08/2016 ML15300A167  Comments 06/16/2016 ML16076A350  No Comments 10/16/2018 ML18234A448	
2007-3	Requirements for Expanded Definition of Byproduct Material Parts 20, 30, 31, 32, 33, 35, 61, 150 72 FR 55864	11/30/2010	Final ML15078A299  Revised Final ML15300A187  Revised Final ML16076A353  Revised Final ML18234A459	Comments 05/26/2015 ML15078A285  Comments 02/08/2016 ML15300A167  Comments 06/16/2016 ML16076A350  Comments 10/16/2018 ML18234A448	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2007-4	Order Imposing Fingerprinting Requirements and Criminal History Records Check Requirements for Unescorted Access to Certain Radioactive Material NRC Order EA-07-305 72 FR 70901	06/05/2008	License Condition ML080350004	No Comments 02/13/2008 ML080440203	
2008-1	Occupational Dose Records, Labeling Containers, and Total Effective Dose Equivalent Parts 19, 20 72 FR 68043	02/15/2011	Final ML112510357	No Comments 11/22/2011 ML113000228	
2009-1	Medical Use of Byproduct Material – Authorized User Clarification Part 35 74 FR 33901	09/28/2012	Final ML112510357	No Comments 11/22/2011 ML113000228	
2011-1	Decommissioning Planning Parts 20, 30, 40, and 70 76 FR 35512	12/17/2015	Proposed ML16218A245  Final ML16321A333  <b>Proposed</b> ML18162A279  Final ML18319A068	Comment 09/10/2016 ML16218A244  Comment 01/18/2017 ML16321A324  Comment 6/19/2018 ML18162A244  No Comments 12/07/2018 ML18317A175	The ADAMS package and associated documents incorrectly characterize this submission as “revised final” regulations instead of “proposed” regulations.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2011-2	Licenses, Certifications, and Approvals for Materials Licensees Parts 30, 36, 39, 40, 70, and 150 76 FR 56951	11/14/2014	Proposed ML 14258B117  Final ML15078A299  Revised Final ML15300A187  Revised Final ML16076A353  Revised Final ML18234A459	No Comments 12/16/2014 ML14258A158  Comments 05/26/2015 ML15078A285  Comment 02/08/2016 ML15300A167  Comments 06/16/2016 ML16076A350  No Comments 10/16/2018 ML18234A448	
2012-1	Change of Compatibility of 10 CFR 31.5 and 31.6 (See RATS ID: 2001-1 for Rule text) 77 FR 3640	01/25/2015	Final ML120650638	No Comments 04/02/2012 ML12066270	
2012-2	Advance Notification to Native American Tribes of Transportation of Certain Types of Nuclear Waste Part 71 77 FR 34194	08/10/2015	Proposed ML14258B117  Final ML15078A299	No Comments 12/16/2014 ML14258A158  No Comments 05/26/2015 ML15078A285	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2012-3	Technical Corrections Part 30, 34, 40 and 71 77 FR 39899	08/06/2015	Proposed ML14258B117  Final ML15078A299	No Comments 12/16/2014 ML14258A158  No Comments 05/26/2015 ML15078A285	
2012-4	Requirements for Distribution of Byproduct Material Parts 30, 31, 32, 40 and 70 77 FR 43666	10/23/2015	Proposed ML14258B117  Final ML15078A299  Revised Final ML15300A187  Revised Final ML16076A353  Revised Final ML18234A459	Comments 12/16/2014 ML14258A158  Comments 05/26/2015 ML15078A285  Comment 02/08/2016 ML15300A167  Comments 06/16/2016 ML16076A350  No Comments 10/16/2018 ML18234A448	
2013-1	Physical Protection of Byproduct Material, 10 CFR Parts 20, 30, 32, 33, 34, 35, 36, 37, 39, and 71 78 FR 16922	03/19/2016	Proposed ML15300A238  Final ML16076A353	Comments 12/01/2015 ML15300A222  No Comments 06/16/2016 ML18076A350	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2013-2	Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions, 10 CFR Parts 30, 40, and 70 78 FR 32310	08/27/2016	Proposed ML15300A238  Final ML16076A353  Revised Final ML18234A459	No Comments 12/01/2015 ML15300A222  Comments 06/16/2016 ML16076A350  No Comments 10/16/2018 ML18234A448	
2015-1	Domestic Licensing of Special Nuclear Material – Written Reports and Clarifying Amendments Part 70 79 FR 57721, 80 FR 143	01/26/2018	Proposed ML15300A238  Final ML16076A353	No Comments 12/01/2015 ML15300A222  No Comments 06/16/2016 ML16076A350	
2015-2	Safeguards Information - Modified Handling Categorization, Change for Materials Facilities Parts 30, 37, 73, and 150 79 FR 58664, 80 FR 3865	01/28/2018	Proposed ML15300A238  Final ML16076A353	No Comments 12/01/2015 ML15300A222  No Comments 06/16/2016 ML16076A350	
*2015-3	Revisions to Transportation Safety Requirements and Harmonization with International Atomic Energy Agency Transportation Requirements Part 71 80 FR 33987	07/13/2018 *extended to 08/15/2020 See STC 17-060	Proposed ML18234A459  Final ML21182A354	Comments 10/16/2018 ML18234A448  No Comments 07/29/2021 ML21182A323	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2015-4	Miscellaneous Corrections, Parts 37 and 40 80 FR 45841	09/02/2018	Proposed ML18234A459  Final ML21182A354	No Comments 10/16/2018 ML18234A448  No Comments 07/29/2021 ML21182A323	
2015-5	Miscellaneous Corrections Parts 19, 20, 30, 32, 37, 40, 61, 70, 71, and 150 80 FR 74974	12/31/2018	Proposed ML18234A459  Final ML21182A354	Comments 10/16/2018 ML18234A448  No Comments 07/29/2021 ML21182A323	
2018-1	Medical Use of Byproduct Material – Medical Event Definitions, Training and Experience, and Clarifying Amendments Parts 30, 32 and 35	01/14/2022	Proposed ML21182A354	Comments 07/29/2021 ML21182A323	
2018-2	Miscellaneous Corrections - Organizational Changes Parts 37, 40, 70 and 71	12/21/2021	Proposed ML21182A354	No Comments 07/29/2021 ML21182A323	
2018-3	Miscellaneous Corrections Parts 1, 2, 34, 37, 50, 71, 73, and 140	07/30/2022	Proposed ML21182A354	Comments 07/29/2021 ML21182A323	
2019-1	Miscellaneous Corrections Parts 2, 21, 37, 50, 52, 73, and 110	12/18/2022	Proposed ML21182A354	No Comments 07/29/2021 ML21182A323	

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2019-2	Organizational Changes and Conforming Amendments Parts 1, 2, 37, 40, 50, 51, 52, 55, 71, 72, 73, 74, 100, 140, and 150	12/30/2022	Proposed ML21182A354	No Comments 07/29/2021 ML21182A323	
2020-1	Individual Monitoring Devices 10 CFR Parts 34, 36, and 39	06/16/2023			
2020-2	Social Security Number Fraud Prevention 10 CFR Parts 9 and 35	08/17/2023	Proposed ML21182A354	No Comments 07/29/2021 ML21182A323	
2020-3	Miscellaneous Corrections 10 CFR Parts 1, 2, 19, 20, 21, 30, 34, 35, 40, 50, 51, 52, 60, 61, 62, 63, 70, 71, 72, 73, 74, 75, 76, 110, and 140	11/16/2023			
N/A	10 CFR 35.11, 35.63, 35.92 and 35.204	N/A	Final ML112510357	No Comments 11/22/2011 ML113000228	
N/A	10 CFR 34 and 39 Not Associated with a Specific RATS	N/A	Final ML113340070	Comments 01/11/2012 ML113550343	
N/A	10 CFR 20, 30, 31, 32, 35, 70 and 71 Not Associated with a Specific RATS	N/A	Proposed ML14258B117  Final ML15078A299	Comments 12/16/2014 ML14258A158  Comments 05/26/2015 ML15078A285	Comments are regarding 10 CFR Parts 20.1403, 20.1405 and 31.12(c)(4).

**STATE REGULATION STATUS**State: **Texas Commission on Environmental Quality**

Tracking Ticket Number: 21-13

Date: 12/11/2020

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1991-1	Safety Requirements for Radiographic Equipment Part 34 55 FR 843 (Superceded by 1997-5)	01/10/1994	Not Applicable	Not Applicable	TX DSHS Responsibility
1991-2	ASNT Certification of Radiographers Part 34 56 FR 11504 (Superceded by 1997-5)	none	Not Applicable	Not Applicable	TX DSHS Responsibility
1991-3	Standards for Protection Against Radiation Part 20 56 FR 23360; 56 FR 61352; 57 FR 38588; 57 FR 57877; 58 FR 67657; 59 FR 41641; 60 FR 20183	01/01/1994	Final	No Comments 11/06/1997	
1991-4	Notification of Incidents Parts 20, 30, 31, 34, 39, 40, and 70 56 FR 64980	10/15/1994	Final	No Comments 01/07/1998	
1992-1	Quality Management Program and Misadministrations Part 35 56 FR 34104 (Superceded by 2002-2)	01/27/1995	Not Applicable	Not Applicable	TX DSHS Responsibility
1992-2	Eliminating the Recordkeeping Requirements for Departures from Manufacturer's Instructions Parts 30 and 35 57 FR 45566	none	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.

Enclosure

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1993-1	Decommissioning Recordkeeping and License Termination: Documentation Additions [Restricted areas and spill sites] Parts 30 and 40 58 FR 39628	10/25/1996	Final	No Comments 01/07/1998	
1993-2	Licensing and Radiation Safety Requirements for Irradiators Part 36 58 FR 7715	07/01/1996	Not Applicable	Not Applicable	TX DSHS Responsibility
1993-3	Definition of Land Disposal and Waste Site QA Program Part 61 58 FR 33886	07/22/1996	Final	No Comments 01/07/1998	
1994-1	Self-Guarantee as an Additional Financial Mechanism Parts 30, 40, and 70 58 FR 68726; 59 FR 1618	none	Final	No Comments 01/07/1998	
1994-2	Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards Part 40 59 FR 28220	07/01/1997	Final	No Comments 01/07/1998	
1994-3	Timeliness in Decommissioning Material Facilities Parts 30, 40, and 70 59 FR 36026	08/15/1997	Final	No Comments 01/07/1998	
1995-1	Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use Parts 30, 32, and 35 59 FR 61767; 59 FR 65243; 60 FR 322	01/01/1998	Not Applicable	Not Applicable	TX DSHS Responsibility

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1995-2	Frequency of Medical Examinations for Use of Respiratory Protection Equipment Part 20 60 FR 7900	03/13/1998	Final	No Comments 01/07/1998	
1995-3	Low-Level Waste Shipment Manifest Information and Reporting Parts 20 and 61 60 FR 15649; 60 FR 25983	03/01/1998	Final	No Comments 01/07/1998	
1995-4	Performance Requirements for Radiography Equipment Part 34 60 FR 28323 <b>(Superceded by 1997-5)</b>	06/30/1998	Not Applicable	Not Applicable	TX DSHS Responsibility
1995-5	Radiation Protection Requirements: Amended Definitions and Criteria Parts 19 and 20 60 FR 36038	08/14/1998	Final	No Comments 01/07/1998	
1995-6	Clarification of Decommissioning Funding Requirements Parts 30, 40, and 70 60 FR 38235	11/24/1998	Final	No Comments 01/07/1998	
1995-7	Medical Administration of Radiation and Radioactive Materials Parts 20 and 35 60 FR 48623 <b>(Superceded by 2002-2 and 2005-2)</b>	10/20/1998	Not Applicable	Not Applicable	TX DSHS Responsibility

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1996-1	Compatibility with the International Atomic Energy Agency Part 71 60 FR 50248; 61 FR 28724 <b>(Superceded by 2004-1)</b>	04/01/1999	Not Applicable	Not Applicable	TX DSHS Responsibility
1996-2	One Time Extension of Certain Byproduct, Source and Special Nuclear Materials Licenses Parts 30, 40, and 70 61 FR 1109	02/15/1999	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1996-3	Termination or Transfer of Licensed Activities: Record keeping Requirements Parts 20, 30, 40, 61, and 70 61 FR 24669	06/17/1999	Final	No Comments 01/07/1998	
1997-1	Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials; Clean Air Act Part 20 61 FR 65120	01/9/2000	Final ML012610092	No Comments 11/26/01 ML013330250	
1997-2	Recognition of Agreement State Licenses in Areas Under Exclusive Federal Jurisdiction Within an Agreement State Part 150 62 FR 1662	02/27/2000	Not Applicable	Not Applicable	TX DSHS Responsibility
1997-3	Criteria for the Release of Individuals Administered Radioactive Material Parts 20 and 35 62 FR 4120	05/29/2000	Not Applicable		TX DSHS Responsibility
1997-4	Fissile Material Shipments and Exemptions Part 71 62 FR 5907 <b>(Superceded by 2004-1)</b>	02/10/2000	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility. (See STP-97-078)

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1997-5	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiography Operations Parts 30, 34, 71, and 150 62 FR 28947	06/27/2000	Not Applicable	Not Applicable	TX DSHS Responsibility
1997-6	Radiological Criteria for License Termination Parts 20, 30, 40, and 70 62 FR 39057	08/20/2000	Final ML063450071	No Comments 01/09/2007 ML070090204	
1997-7	Exempt Distribution of a Radioactive Drug Containing One Microcurie of Carbon-14 Urea Part 30 62 FR 63634	01/02/2001	Not Applicable	Not Applicable	TX DSHS Responsibility
1998-1	Deliberate Misconduct by Unlicensed Persons Parts 30, 40, 61, 70, 71, and 150 63 FR 1890; 63 FR 13773	02/12/2001	Final ML063450071	No Comments 1/09/07 ML070090204	
1998-2	Self-Guarantee of Decommissioning Funding by Nonprofit and Non-Bond-Issuing Licensees Parts 30, 40, and 70 63 FR 29535	07/01/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1998-3	License Term for Medical Use Licenses Part 35 63 FR 31604 <b>(Superceded by 2002-2)</b>	07/10/2001	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility. (See STP-98-074)
1998-4	Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations Part 34 63 FR 37059	07/09/2001	Not Applicable	Not Applicable	TX DSHS Responsibility

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
1998-5	Minor Corrections, Clarifying Changes, and a Minor Policy Change Parts 20, 32, 35, 36, and 39 63 FR 39477; 63 FR 45393	10/26/2001	Final ML012610092	No Comments 11/26/2001 ML013330250	
1998-6	Transfer for Disposal and Manifests: Minor Technical Conforming Amendment Part 20 63 FR 50127	11/20/2001	Final ML063450071	No Comments 01/09/2007 ML070090204	
1999-1	Radiological Criteria for License Termination of Uranium Recovery Facilities Part 40 64 FR 17506	06/11/2002	Revised Final ML13240A300  Revised Final ML16321A333	Comments 10/03/2013 ML13240A299  No Comments 01/18/2017 ML16321A324	
1999-2	Requirements for Those Who Possess Certain Industrial Devices Containing Byproduct Material to Provide Requested Information Part 31 64 FR 42269	10/04/2002	Not Required	Not Required	These regulation changes are not required to be adopted for purposes of Compatibility.
1999-3	Respiratory Protection and Controls to Restrict Internal Exposure Part 20 64 FR 54543; 64 FR 55524	02/02/2003	Final ML012610092	No Comments 11/26/2001 ML013330250	
2000-1	Energy Compensation Sources for Well Logging and Other Regulatory Clarifications Part 39 65 FR 20337	05/17/2003	Not Applicable	Not Applicable	TX DSHS Responsibility

<b>RATS ID</b>	<b>NRC Chronology Identification</b>	<b>Date Due for State Adoption</b>	<b>Incoming Letter</b>	<b>Outgoing Package</b>	<b>Notes</b>
2000-2	New Dosimetry Technology Parts 34, 36, and 39 65 FR 63750	01/08/2004	Not Applicable	Not Applicable	TX DSHS Responsibility
2001-1	Requirements for Certain Generally Licensed Industrial Devices Containing Byproduct Material Parts 30, 31, and 32 65 FR 79162	02/16/2004	Not Applicable	Not Applicable	TX DSHS Responsibility
2002-1	Revision of the Skin Dose Limit Part 20 67 FR 16298	04/05/2005	Final ML063450071	No Comments 01/09/2007 ML070090204	
2002-2	Medical Use of Byproduct Material Parts 20, 32, and 35 67 FR 20249	10/24/2005	Not Applicable	Not Applicable	TX DSHS Responsibility
2003-1	Financial Assurance for Materials Licensees Parts 30, 40, and 70 68 FR 57327	12/03/2006	Final ML063450071	No Comments 01/09/2007 ML070090204	
2004-1	Compatibility with IAEA Transportation Safety Standards and Other Transportation Safety Amendments Part 71 69 FR 3697	10/01/2007	Not Applicable	Not Applicable	TX DSHS Responsibility
2005-1	Security Requirements for Portable Gauges Containing Byproduct Material Part 30 70 FR 2001	07/11/2008	Not Applicable	Not Applicable	TX DSHS Responsibility

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2005-2	Medical Use of Byproduct Material - Recognition of Specialty Boards Part 35 70 FR 16336; 71 FR 1926	04/29/2008	Not Applicable	Not Applicable	TX DSHS Responsibility
2005-3	Increased Controls for Risk-Significant Radioactive Sources (NRC Order EA-05-090) 70 FR 72128	12/01/2005	Final ML14055A034  License Condition ML052240226	No Comments 05/03/2014 ML14055A027  No Comments 12/12/2005 ML053420404	
2006-1	Minor Amendments Parts 20, 30, 32, 35, 40, and 70 71 FR 15005	03/27/2009	Final ML16071A117	No Comments 03/30/2016 ML16071A113	
2006-2	National Source Tracking System - Serialization Requirements Part 32 with reference to Part 20 Appendix E 71 FR 65685	02/06/2007	Not Applicable	Not Applicable	TX DSHS Responsibility
2006-3	National Source Tracking System Part 20 71 FR 65685, 72 FR 59162	01/31/2009	Final ML14055A034	No Comments 05/13/2014 ML14055A027	Note: TCEQ adopted this provision prior to the LLW site becoming operational and receiving waste.
2007-1	Medical Use of Byproduct Material - Minor Corrections and Clarifications Parts 32 and 35 72 FR 45147, 54207	10/29/2010	Not Applicable	Not Applicable	TX DSHS Responsibility
2007-2	Exemptions from Licensing, General Licenses, and Distribution of Byproduct Material: Licensing and Reporting Requirements Parts 30, 31, 32, and 150 72 FR 58473	12/17/2010	Not Applicable	Not Applicable	TX DSHS Responsibility

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2007-3	Requirements for Expanded Definition of Byproduct Material Parts 20, 30, 31, 32, 33, 35, 61, and 150 72 FR 55864	11/30/2010	Final ML14055A034	No Comments 05/13/2014 ML14055A027	
2007-4	Order Imposing Fingerprinting Requirements and Criminal History Records Check Requirements for Unescorted Access to Certain Radioactive Material NRC Order EA-07-305 72 FR 70901	06/05/2008	License Condition ML082100350	No Comments 09/11/2008 ML082410019	
2008-1	Occupational Dose Records, Labeling Containers, and Total Effective Dose Equivalent Parts 19 and 20 72 FR 68043	02/15/2011	Final ML14055A034  Revised Final ML16321A333	Comments 05/13/2014 ML14055A027  No Comments 01/18/2017 ML16321A324	
2009-1	Medical Use of Byproduct Material – Authorized User Clarification Part 35 74 FR 33901	09/28/2012			TX DSHS Responsibility
*2011-1	Decommissioning Planning Parts 20, 30, 40, and 70 76 FR 35512	12/17/2015	Proposed ML16218A245  Final ML16321A333  <b>Proposed</b> ML18162A279	Comment 09/10/2016 ML16218A244  Comment 01/18/2017 ML16321A324  No Comments 6/19/2018 ML18162A244	The ADAMS package and associated documents incorrectly characterize this submission as “revised final” regulations instead of “proposed” regulations.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2011-2	Licenses, Certifications, and Approvals for Materials Licensees Parts 30, 36, 39, 40, 70, and 150 76 FR 56951	11/14/2014	Proposed ML16140A109  Proposed ML16218A245  Final ML16321A333	Comments 6/27/2016 ML16140A044  No Comments 09/10/2016 ML16218A244  No Comments 01/18/2017 ML16321A324	
2012-1	Change of Compatibility of Parts 31.5 and 31.6 (See RATS ID: 2001-1 for Rule text) 77 FR 3640	01/25/2015	Not Applicable	Not Applicable	TX DSHS Responsibility
2012-2	Advance Notification to Native American Tribes of Transportation of Certain Types of Nuclear Waste Part 71 77 FR 34194	08/10/2015	Not Applicable	Not Applicable	TX DSHS Responsibility
2012-3	Technical Corrections Parts 30, 34, 40, and 71 77 FR 39899	08/06/2015	Proposed ML16218A245  Final ML16321A333	No Comments 09/10/2016 ML16218A244  No Comments 01/18/2017 ML16321A324	
2012-4	Requirements for Distribution of Byproduct Material Parts 30, 31, 32, 40, and 70 77 FR 43666	10/23/2015	Not Applicable	Not Applicable	TX DSHS Responsibility

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2013-1	Physical Protection of Byproduct Material Parts 20, 30, 32, 33, 34, 35, 36, 37, 39, and 71 78 FR 16922	03/19/2016	Proposed ML15323A211  Proposed License Condition ML16049A214  Final ML16321A333	Comments 01/13/2016 ML15323A207  No Comments 03/01/2016 ML16049A154  No Comments 01/18/2017 ML16321A324	
2013-2	Distribution of Source Material to Exempt Persons and to General Licensees and Revision of General License and Exemptions Parts 30, 40 and 70 78 FR 32310	08/27/2016	Final ML16321A333	No Comments 01/18/2017 ML16321A324	
2015-1	Domestic Licensing of Special Nuclear Material – Written Reports and Clarifying Amendments Part 70 79 FR 57721, 80 FR 143	01/26/2018	Final ML16140A109	No Comments 6/27/2016 ML16140A044	
2015-2	Safeguards Information - Modified Handling Categorization, Change for Materials Facilities Parts 30, 37, 73, and 150 79 FR 58664, 80 FR 3865	01/28/2018	Final ML15323A211  Revised Final ML16321A333	Comments 01/13/2016 ML15323A207  No Comments 01/18/2017 ML16321A324	
2015-3	Revisions to Transportation Safety Requirements and Harmonization with International Atomic Energy Agency Transportation Requirements Part 71 80 FR 33987	07/13/2018 *extended to 08/15/2020 See STC 17-060	Not Applicable	Not Applicable	TX DSHS Responsibility

<b>RATS ID</b>	<b>NRC Chronology Identification</b>	<b>Date Due for State Adoption</b>	<b>Incoming Letter</b>	<b>Outgoing Package</b>	<b>Notes</b>
2015-4	Miscellaneous Corrections Parts 37 and 40 80 FR 45841	09/02/2018	Proposed ML16218A245  Final ML16321A333	No Comments 09/10/2016 ML16218A244  No Comments 01/18/2017 ML16321A324	
2015-5	Miscellaneous Corrections Parts 19, 20, 30, 32, 37, 40, 61, 70, 71, and 150 80 FR 74974	12/31/2018	Proposed ML16218A245  Final ML16321A333	No Comments 09/10/2016 ML16218A244  No Comments 01/18/2017 ML16321A324	
2018-1	Medical Use of Byproduct Material – Medical Event Definitions, Training and Experience, and Clarifying Amendments, 10 CFR Parts 30, 32 and 35	01/14/2022			
2018-2	Miscellaneous Corrections - Organizational Changes 10 CFR Parts 37, 40, 70 and 71	12/21/2021			
2018-3	Miscellaneous Corrections 10 CFR Parts 1, 2, 34, 37, 50, 71, 73, and 140	07/30/2022			
2019-1	Miscellaneous Corrections 10 CFR Parts 2, 21, 37, 50, 52, 73, and 110	12/18/2022			
*2019-2	Organizational Changes and Conforming Amendments 10 CFR Parts 1, 2, 37, 40, 50, 51, 52, 55, 71, 72, 73, 74, 100, 140, and 150	12/30/2022	ML20344A368	12/11/2020 ML20344A036	TX DSHS RESPONSIBILITY
*2020-1	Individual Monitoring Devices 10 CFR Parts 34, 36, and 39	06/16/2023	ML20344A368	12/11/2020 ML20344A036	TX DSHS RESPONSIBILITY

<b>RATS ID</b>	<b>NRC Chronology Identification</b>	<b>Date Due for State Adoption</b>	<b>Incoming Letter</b>	<b>Outgoing Package</b>	<b>Notes</b>
2020-2	Social Security Number Fraud Prevention 10 CFR Parts 9 and 35	08/17/2023	ML20344A368	12/11/2020 ML20344A036	TX DSHS RESPONSIBILITY
2020-3	Miscellaneous Corrections 10 CFR Parts 1, 2, 19, 20, 21, 30, 34, 35, 40, 50, 51, 52, 60, 61, 62, 63, 70, 71, 72, 73, 74, 75, 76, 110, and 140	11/16/2023			
N/A	Compact Waste Disposal Facility and Commingling of Waste Part 61	N/A	Final ML121230326	No Comments 06/29/2012 ML12152A150	
N/A	Part 40	N/A	R ML13240A300  Revised Final ML16321A333	Comments 10/03/2013 ML13240A299  No Comments DATE ML16321A324	
N/A	Exemption for Radioactive Substances from Disposal Requirements	N/A	Final ML13176A107	No Comments 08/15/2013 ML13176A104	
N/A	Legislation on Production Area Authorizations and Compact Waste	N/A	Final ML13178A064	No Comments 08/23/2013 ML13178A059	

**Appendix B-4****Question 3**

Name	Position	Area of Effort	FTE%
Raven Alexander	WIPP Contract Trainer	Materials Compliance Emergency Response Administration	20 65 15
Chris Amaro	Emergency Planner	Emergency Response Administration	95 5
Karen Blanchard	Incident Investigator	Materials Compliance Emergency Response Administration	90 7 3
Stefanie Blum	License Reviewer Industrial	Materials Licensing Emergency Response	95 5
Lisa Bruedigan	Director, Radiation Section	Materials Compliance Emergency Response Administration	20 10 70
Jason Callahan	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Ruben Cortez	Radiation Safety Officer	Emergency Response Environmental Monitoring Instrument Calibration	10 60 30
Shay Christian	Emergency Planner	Emergency Response X-Ray Program	50 50
Vanessa Danese	License Reviewer Medical and Academic, Industrial	Materials Licensing Emergency Response	90 10
Harry Drake	Environmental Specialist	Materials Compliance Emergency Response Administration	35 15 50
William Duncan	Quality Assurance Reviewer	Materials Compliance Emergency Response	95 5
James Durham	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Robert Fisher	Emergency Planner	Emergency Response Administration	95 5
Edward Flores	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Robert Free	Manager Environmental Monitoring Group	Materials Compliance Emergency Response Administration	40 30 30

Name	Position	Area of Effort	FTE%
Shawn Garza	Industrial Licensing Program Coordinator	Materials Licensing SS&D Emergency Response	85 5 10
Tim Gibson	Emergency Planner	Emergency Response Mammography Program	50 50
Tony Haynes	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Justin Highland	License Reviewer Medical and Academic	Materials Licensing Emergency Response	95 5
Albert Hille	Program Specialist	Materials Licensing Emergency Response Administration	15 5 80
Sonia Hille	Advanced Technology Licensing Program Coordinator	Materials Licensing Emergency Response	95 5
Gabrielle Howard	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Scott Kee	Medical and Academic Licensing Program Coordinator	Materials Licensing Emergency Response	95 5
Matt Kennington	Incident Investigator	Materials Compliance Emergency Response Administration	90 7 3
Joyce LeRoux	Industrial Radiography Certification Specialist	IR Certification Emergency Response	95 5
Eric McManus	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Chris Moore	Incident Investigator/ Emergency Planner	Materials Compliance Emergency Response Administration	50 40 10
Chris Myers	Lead Quality Assurance Reviewer	Materials Compliance Emergency Response	95 5
Robin Phillips	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5

Name	Position	Area of Effort	FTE%
Randall Redd	Incident Investigator	Materials Compliance Emergency Response Administration	90 7 3
Tiffany Rushing	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Renu Selli	License Reviewer Medical and Academic	Materials Licensing Emergency Response	95 5
Earlon Shirley	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Eric Skotak	Manager Radioactive Materials Inspections	Materials Compliance Emergency Response Administration	60 5 35
Keith Smith	License Reviewer Industrial & Reciprocity	Materials Licensing Emergency Response SS&D	90 5 5
Bridget Stephens	Industrial Radiography Certification Program Coordinator	IR Certification Emergency Response	95 5
Darwin (DD) Stiles	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Craig Sutton	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Art Tucker	Incident Investigator	Materials Compliance Emergency Response Administration	90 7 3
Vacant	RAM Rules Coordinator	Rules Development Emergency Response	95 5
Vacant	License Reviewer	Materials Licensing Emergency Response	95 5
Vacant	Quality Assurance Reviewer	Materials Compliance Emergency Response	95 5
Vacant	Environmental Protection Specialist	NRC Training Coordination Administration	20 80

Name	Position	Area of Effort	FTE%
Vacant	Radioactive Materials Inspector (Houston)	Materials Compliance Emergency Response Administration	92 3 5
Vacant	Emergency Planner	Emergency Response Administration	95 5
Vacant	WIPP Contract Coordinator	Materials Compliance Emergency Response Administration	20 65 15
Brian Vamvakias	Manager PSQA Radiation	Materials Compliance Rule Coordination Emergency Response	80 15 5
Karl Von Ahn	Manager Radioactive Materials Licensing	Materials Licensing SS&D Emergency Response	90 5 5
Forrest Weston	Radioactive Materials Inspector	Materials Compliance Emergency Response Administration	92 3 5
Cathy Wolfe	Environmental Specialist	Materials Compliance Emergency Response Administration	35 15 50

**Appendix B-5      Question 4**

Name	Group	Degree	Experience	Start Date
Craig Sutton	Inspections	MS Public Health BS Physics	6 years	2/1/2019
Tiffany Rushing	Inspections	BS Environmental Health	5 years	2/10/2020
Earlon Shirley	Inspections	BS Engineering/Physics	22 years	9/28/2020
Eric McManus	Inspections	BS Chemistry	13 years	5/10/2021
Edward Flores	Inspections	BS Radiological Health Engineering	None	11/15/2021
Brian Vamvakias	PSQA	MS Radiation Ecology BS Biomedical Science	30 years	2/19/2019
Stefanie Blum	Licensing	MS Physics	7 years	4/1/2021
Renu Selli	Licensing	MS Environmental Biology/Nutrition BS Biology	9 years	2/1/2019
Justin Highland	Licensing	BS Physics/Engineering	2 years	7/1/2020
Sonia Hille	Licensing	BA Business	10 years	8/24/2021
Matthew Kennington	Environmental Monitoring	BS Nuclear Engineering	3 years	10/15/2018
Randall Redd	Environmental Monitoring	MS Health Physics	3 years	4/15/2019
Robert Fisher	Environmental Monitoring	MS Physics	5 Years	2/1/2020
Raven Alexander	Environmental Monitoring	MS Health Physics	1 year	7/26/2021

**Appendix B-6      Question 5**

Name	Title	Training Needed	Expected Completion Date
Tiffany Rushing	Inspector	Completed All Training. Awaiting final approval and accompaniment by manager for full qualification	Early 2022
Eric McManus	Inspector	H-305 Industrial Radiography H-308S Transportation of RAM H-314 Well Logging	Late 2022
Edward Flores	Inspector	G-108 Inspection Procedures H-304 Nuclear Medicine H-313 Brachytherapy & Gamma Knife G-205 Root Cause H-305 Industrial Radiography H-308S Transportation of RAM H-314 Well Logging S-201 Materials Control and Security Systems & Principles Course	2023
Stefanie Blum	License Reviewer Industrial	S-201 Materials Control and Security Systems & Principles Course H-308S Transportation of RAM H-314 Well Logging H122 Lab – Fundamental Health Physics Labs Course OJT license types	2022 Currently Enrolled 2022 2022 As available
Renu Selli	License Reviewer Medical and Academic	S-201 Materials Control and Security Systems & Principles Course H122 Lab – Fundamental Health Physics Labs Course OJT license types	2022 2022 As Available
Justin Highland	License Reviewer Medical and Academic	S-201 Materials Control and Security Systems & Principles Course H-308S Transportation of RAM H122 Lab – Fundamental Health Physics Labs Course H122S Fundamental Health Physics Self-Study	2022 Currently Enrolled 2022 Currently Enrolled
Matthew Kennington	Incident Investigator	H-308S Transportation of RAM	2022
Randall Redd	Incident Investigator	G-108 Inspection Procedures H-308S Transportation of RAM	2022 2022

**Appendix B-7      Question 7**

Name	Position	Date Departed
Steven Fernandez	Radioactive Materials Inspector	7/20/2018
Chuck Flynn	Manager Radiation PSQA Group	10/31/2018
Paul Sanford	License Reviewer Medical and Academic	12/31/2018
Roger Sawyer	Advanced Technology Licensing Program Coordinator	3/31/2021
Stephen Guetersloh	License Reviewer Medical and Academic	4/25/2019
Marina Pulley	Radioactive Materials Inspector	10/11/2019
Farrar Stewart	Radioactive Materials Inspector	10/24/2019
Helen Watkins	License Reviewer Medical and Academic	4/30/2020
Timothy Sanchez	Radioactive Materials Inspector	7/24/2020
Rick Croy	Radioactive Materials Inspector	2/28/2021
Israel Chavarria	Radioactive Materials Inspector	5/11/2021
Michael Green	Radioactive Materials Inspector	5/19/2021
Greg Gurnee	Radioactive Materials Inspector	8/31/2021
Richard Lamboi	Quality Assurance Specialist	2/28/2021
Elizabeth Speights	Environmental Protection Specialist	9/30/2021
Peggy Westlund	RAM Rules Coordinator	4/30/2021
Syed Naeem	License Reviewer Medical and Academic	1/11/2021
Amber Bolen	Emergency Planner/ Grant Coordinator	11/30/2018
Irene Casares	Incident Investigator	1/31/2019
Glenn Corbin	Emergency Planner	12/31/2021
Gentry Hearn	Incident Investigator	6/30/2018

Name	Position	Date Departed
Mike Rutherford	WIPP Contract Coordinator	10/31/2021
Rae Walker	Emergency Planner	4/22/2019
Jose Trevino	Emergency Planner	8/30/2020
Lauren McGuire	Environmental Protection Specialist	4/1/2019
Brad Britten	Emergency Planner	10/1/2020

**Appendix B-8****Question 8**

Position	Date Vacated	Attempts to Fill
License Reviewer	9/1/2021	Position is currently posted. Expected Hire date 3/1/2022
Radioactive Materials Inspector (Houston)	5/21/2021	Position posted twice with 4 offers declined. Position posted a 3 <sup>rd</sup> time
Quality Assurance Reviewer	2/28/2021	Position posted in April 2021 with no applicants meeting initial qualifications. Position description is being revised and will repost
RAM Rules Coordinator	4/30/2021	Position was posted in January and applications are being reviewed now
Environmental Protection Specialist	9/30/2021	Position to be audited for potential move to the Mammography program
Emergency Planner	12/31/2021	Position has not yet been posted. Position should be posted in first quarter of 2022.
WIPP Contract Coordinator	10/31/2021	Position has posted and closed. Expected Hire to be made February 2022.

**Appendix B-9****Question 9**

<b>Texas Radiation Advisory Board</b> 1100 West 49 <sup>th</sup> Street Austin, Texas 78756-3189	
Charles Cavnor Labor 2025	Ken Peters Nuclear Utility 2025
Lynn Silguero Public 2025	Lisa Masters, D.D.S. Dentist 2027
Michael Britt Insurance 2027	Darlene Metter, M.D. Nuclear Medicine 2025
Darshan J. Sachde, Ph.D. Public 2025	Doug Posey, D.V.M. Agriculture 2023
Sanjay Narayan Public 2027	Bob Redweik Petroleum Well Service Industry 2025
John P. Hageman, C.H.P. Health Physics 2023	Simon Trubek, M.D. Radiology 2027
Gerald (Tim) Powell Radioactive Waste 2027	Kevin L. Raabe Uranium 2023
Ronald Benke, Ph.D. Industry 2027	Mark A. Silberman, M.D. Pathology 2023
Mark C. Harvey, Ph.D. Nuclear Physics in Medicine 2027	William Pate, Dr.PH. Hospital Administration 2023

Appendix B-10

Question 10

License Type	Authorization	DSHS & NRC Initial Interval	NRC Priority	NRC Routine Interval	DSHS Routine Interval	NRC IMPEP Interval
3101 - General License Acknowledgement	G - 031 GLA In-Vitro Testing	365	5	1825	1825	2190
3101 - General License Acknowledgement	G - 061 GLA Gauge	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 001 Accelerator	365	2	730	730	1095
3102 - Radioactive Materials	L - 003 Broad License	335	2	730	730	1095
3102 - Radioactive Materials	L - 004 Civil Defense	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 006 Demonstration/Sales	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 013 Neutron Generator Target-Sealed	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 015 Manufacturing & Commercial Distributor	365	2	730	730	1095
3102 - Radioactive Materials	L - 017 Eye Applicator	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 019 X-Ray Fluorescence	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 021 Gas Chromatograph	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 022 Gauge-Fixed	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 024 Gauge-Spinning Pipe-Thickness/Portable	365	5	1825	1095	2190
3102 - Radioactive Materials	L - 027 Industrial Radiography (Fixed Facility)	365	2	730	730	1095
3102 - Radioactive Materials	L - 028 Industrial Radiography (Temporary Field	365	1	365	365	547
3102 - Radioactive Materials	L - 029 Calibration of Survey and Measurement Ins	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 030 Irradiator-Self Contained	365	5	1825	1095	2190
3102 - Radioactive Materials	L - 033 Leak Test Service	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 035 Mobile Scanning Service	365	2	730	730	1095
3102 - Radioactive Materials	L - 036 Written Directive Not Required	365	5	1825	1095	2190
3102 - Radioactive Materials	L - 037 Nuclear Pharmacy	365	2	730	730	1095
3102 - Radioactive Materials	L - 040 Processor of Loose Radioactive Material	365	1	365	365	547
3102 - Radioactive Materials	L - 042 Research And/or Development	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 043 Source Material	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 045 Special Nuclear Material	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 046 Teletherapy	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 048 Teaching  Training  & Education (Not Use	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 049 Written Directive-Sealed Source	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 050 Tracer Studies (Non-Oil Well)	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 051 Tracer Studies (Oil Well)	365	3	1095	1095	1460

License Type	Authorization	DSHS & NRC Initial Interval	NRC Priority	NRC Routine Interval	DSHS Routine Interval	NRC IMPEP Interval
3102 - Radioactive Materials	L - 053 Well Logging	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 054 Handheld Light Intensifying Imaging Dev	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 057 Limited Manufacturing (Loose Material)	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 058 Calibration and Reference Source	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 061 GLA Gauge	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 062 Fine Leak Testing Device	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 065 Storage Only	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 070 Agency-Accepted Training Course	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 071 In-Vitro Test Kit-Manufacturer	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 072 Installer  Repair  Or Maintenance	365	2	730	730	1095
3102 - Radioactive Materials	L - 073 Pipe Joint Collar Marker	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 074 Radiopharmaceutical Manufacturing	365	2	730	730	1095
3102 - Radioactive Materials	L - 075 Irradiator (Unshielded)	365	2	730	730	1095
3102 - Radioactive Materials	L - 076 Written Directive-Unsealed Source	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 080 Mineral Recovery (Byproduct Material)	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 081 256(q) Therapeutic Emerging Tech	365	2	730	730	1095
3102 - Radioactive Materials	L - 082 Mobile Medical Services WD Not Required	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 085 Bone Mineral Analyzer	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 086 Mobile Medical Services WD-Sealed Source	365	2	730	730	1095
3102 - Radioactive Materials	L - 087 Mobile Medical Services WD-Unsealed Src	365	2	730	730	1095
3102 - Radioactive Materials	L - 092 Commercial Distribution Only	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 093 Environmental Laboratory	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 094 Decontamination Service-Mobile	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 098 Other Specific License	365	5	1825	1095	2190
3102 - Radioactive Materials	L - 099 Decontamination Service-Fixed Site	365	3	1095	1095	1460
3102 - Radioactive Materials	L - 100 Fixed Multi-Beam-Teletherapy	365	2	730	730	1095
3102 - Radioactive Materials	L - 101 Remote Controlled Brachytherapy Device	365	2	730	730	1095
3102 - Radioactive Materials	L - 105 Depleted Uranium	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 283 In-Vitro Use of Radioactive Material	365	5	1825	1825	2190
3102 - Radioactive Materials	L - 857 NORM-Commercial Processing	365	3	1095	1095	1460

## Appendix B-11      Question 12

License-site	Licensee Name	NRC Priority	Previous Inspection Date	Due Date	Routine Inspection Date	Days Overdue	Date Inspection Findings Issued
L01575-000	BERRY GP INC	1	06/07/2018	12/6/2019	12/17/2019	10	1/15/2020
L02991-000	NUCLEAR SOURCES AND SERVICES INC	1	06/13/2019	12/11/2020	02/10/2021	60	3/10/2021
L05417-000	TURNER SPECIALTY SERVICES LLC	1	12/03/2018	6/2/2020	06/30/2020	27	7/21/2020
L05956-000	QC LABORATORIES INC	1	11/28/2018	5/28/2020	07/01/2020	33	7/27/2020
L06168-000	TANK AND VESSEL BUILDERS LP	1	11/26/2018	5/26/2020	06/25/2020	29	7/7/2020
L06497-000	CRITICAL RESPONSE INSPECTION SERVICE LLC	1	12/18/2018	6/17/2020	06/23/2020	5	6/30/2020
L06864-000	ARC INSPECTION SERVICES LLC	1	10/23/2018	4/22/2020	07/09/2020	77	7/30/2020
L06880-000	SCHLUMBERGER TECHNOLOGY CORPORATION	1	01/08/2019	7/8/2020	07/23/2020	14	8/4/2020
L06896-000	SQS NDT LP	1	01/15/2019	7/15/2020	07/30/2020	14	8/13/2020
L06925-000	SOUND NDT SOLUTIONS LLC	1	06/22/2018	12/21/2019	01/09/2020	19	1/27/2020
L00154-000	TEXAS ONCOLOGY PA	2	05/23/2017	5/22/2020	07/01/2020	40	7/27/2020
L01186-000	THERMO FINNIGAN LLC	2	02/16/2017	2/16/2020	02/25/2020	9	3/6/2020
L01886-003	UNIVERSITY OF HOUSTON ENVIRONMENTAL HEALTH AND LIFE SAFETY DEPT	2	06/22/2017	6/21/2020	08/05/2020	45	8/13/2020
L04612-000	TEXAS CHILDRENS HOSPITAL	2	07/21/2017	7/20/2020	07/30/2020	10	8/25/2020
L04723-000	BAY AREA HEALTHCARE GROUP LTD	2	05/05/2016	5/5/2019	12/19/2019	228	1/22/2020
L05788-000	METHODIST HEALTH CENTERS	2	06/08/2016	6/8/2019	08/19/2019	72	8/21/2019
L06465-000	TEXAS ONCOLOGY PA	2	12/07/2016	12/7/2019	08/04/2020	241	8/6/2020
L06475-002	METHODIST HOSPITALS OF DALLAS	2	07/11/2018	7/10/2021	10/26/2021	107	11/16/2021
L06661-000	CHI ST LUKES HEALTH BAYLOR COLLEGE OF MEDICINE MEDICAL CENTER	2	11/20/2017	11/19/2020	04/22/2021	154	5/17/2021
L00446-060	BAKER HUGHES OILFIELD OPERATIONS LLC	3	07/15/2016	7/14/2020	07/29/2020	15	8/19/2020
L01990-002	GREAT GUNS INCORPORATED	3	02/15/2017	2/14/2021	05/06/2021	81	5/10/2021

Appendix B-12      Question 12

License-site	Licensee Name	NRC Priority	Site Licensed Date	Inspection Due Date	Initial Inspection Date	Days Overdue	Date Inspection Findings Issued
L06608-004	ALS MAVERICK TESTING LABORATORIES INC	1	7/16/2019	7/16/2020	9/30/2020	77	10/12/2020
L06966-000	MED FUSION LLC	5	11/28/2018	11/28/2019	12/4/2019	6	12/20/2019
L07022-000	WOODLANDS ELITE CARDIOLOGY PLLC	5	09/05/2019	9/5/2020	9/23/2020	19	10/8/2020
L07026-000	THE DOW CHEMICAL COMPANY	5	10/07/2019	10/7/2020	11/6/2020	31	11/25/2020

**Appendix B-14      Question 17**

Name	Instrument	Calibration Date
Jason Callahan	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	3/12/2021 9/12/2021 8/16/2021
James Durham	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	3/12/2021 9/12/2021 9/24/2021
Eddie Flores	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	8/31/2021 10/5/2021 9/27/2021
Eric McManus	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	5/11/2021 In Training/Not required 8/17/2021
Tony Haynes	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	3/12/2021 10/11/2021 9/24/2021
Gabrielle Howard	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	8/31/2021 10/11/2021 8/16/2021
Robin Phillips	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	3/12/2021 9/29/2021 9/24/2021
Craig Sutton	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	4/07/2021 9/12/2021 8/17/2021
Tiffany Rushing	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	1/29/2021 9/12/2021 8/16/2021
Earlon Shirley	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	3/12/2021 10/05/2021 8/17/2021
Eric Skotak	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	3/12/2021 Checks out as needed 9/24/2021
Darwin (DD) Stiles	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	3/12/2021 10/15/2021 9/24/2021
Forrest Weston	Ludlum 2241 Ludlum Model 2363 Thermo RadEye SPRD-GN	4/7/2021 9/12/2021 9/24/2021

## **RADIATION SURVEY INSTRUMENT CALIBRATION AND MAINTENANCE PROCEDURES**

### **TEXAS DEPARTMENT OF STATE HEALTH SERVICES**

#### **BACKGROUND**

Calibration of portable radiation survey instruments is a process which may be conducted with varying degrees of accuracy and precision. Both are a function of the facilities and equipment, time, personnel and financial resources available to perform the calibration. The object of calibrating an instrument intended for routine use is to ensure that its accuracy is adequate under the conditions in which it is used (ICRU 1976). The following set of procedures has been written in order to document the conditions under which portable survey instruments are currently being calibrated at the Texas Department of State Health Services, and to establish the procedures for users of portable survey instruments which assure that a minimum set of precautions are observed in the field to verify that the instruments function properly and that the calibration is valid.

Proper care of radiation detection and measuring equipment, as with all equipment, is the primary mechanism for insuring its proper functioning. Each individual to whom an instrument is assigned also has assigned the responsibility to perform frequent checks on the equipment to assure its proper functioning and to report immediately any problem which, based on their experience and familiarity with their survey instrumentation indicates a particular instrument is not functioning reliably. Further discussion of these responsibilities will be presented later in the text.

In order to facilitate communications regarding any problems encountered with portable radiation detection and measuring equipment, when practicable, a copy of the manufacturer's manual for each instrument and detector commonly used will be included as part of this manual. Additionally, familiarity with the operational characteristics of each instrument an inspector uses should enhance his abilities to perform surveys. Whenever possible, the manufacturer's calibration procedures will be followed. Significant deviations from manufacturer's suggested procedures will be verified with the manufacturer, prior to implementation or have a rationale developed and in both cases documented in the manual.

#### **CONSTANCY CHECKS AND MAINTENANCE**

As soon after calibration as possible each inspector should check his/her instrument against a small check source, such as those provided in the check source kits. One should use the same source each time the instrument is checked and one should also be sure to position the source at the same location on or near the detector.

This check should be made on all detectors, not just those that are calibrated as a means of assuring oneself that the operating characteristics of the detectors and the rate meter have not changed. The GM detectors should be checked daily, since they are used routinely to determine compliance. Other detectors may be checked less frequently. Each region should have an appropriate source of radiation for each of the common types of radiation except, of course, neutrons. Neutron detectors will be Operationally checked at Central Office before being sent to Inspectors, if inspector feels that detector may have issue it can be sent to Central Office to check and evaluate.

Sodium iodide detectors should be checked regularly for changes in response in established radiation fields. Crystals which have been fractured or which have begun to swell and discolor (they will

become yellow as iodine is released) will demonstrate significantly lower count rates than normal. Although less frequent a problem photomultiplier tubes may also go bad. Generally, a bad photomultiplier tube will be manifested by a sudden rise in count rate with no apparent cause. A damaged photomultiplier tube, however, might demonstrate a decreased count rate if one of the dynodes were displaced.

As well as checking the detectors frequently, each inspector should also check batteries and battery contacts frequently. Also, if the instrument is to be stored for more than thirty days the batteries should be removed<sup>1</sup>. In humid climates the indicator/desiccant should be checked every month at a minimum and dried as described in "Preparation for Calibration" when necessary. Cleaning battery contacts every three months will also prevent unexpected losses of power and provide an opportunity to check the condition of the batteries periodically<sup>2</sup>.

One should be mindful that the calibration of an instrument takes place under a fairly stringently defined set of conditions. Although one would like for these conditions to match those encountered in the field, they rarely do. When making measurements to determine compliance one should to the degree possible use the detector or instrument in the same orientation to the source of radiation as it had during calibration. One should be aware of significant differences in the energy or distribution of energies of the radiations which he is measuring compared to those used during calibration. Note should be made of whether radiation is being measured under broad or narrow beam conditions and whether or not other types of radiation may be present which might interfere with the measurement.

### **PREPARATION FOR CALIBRATION**

Prior to bringing a survey instrument in for calibration each inspector should determine that the batteries are good or, if necessary, replace them. Additionally, in the case of ionization chamber instruments each inspector shall make sure that the indicator/desiccant is dry. If not, it may be dried by pouring it into a dish and heating it in a microwave oven until it turns dark blue or by placing it in a conventional oven and heating it for twelve hours at 250°F or one hour at 400°F<sup>3</sup>. Always allow sufficient time for the indicator/desiccant to cool before replacing it in its holder.

### **CALIBRATION PROCEDURES**

#### **CALIBRATION FACILITIES**

At present all portable survey instruments, except the Raysafe X2's, Ludlum Models 77-3, 9DP, and 2363 are calibrated at the Radiation Controls calibration range. The calibration range is located at the Health and Human Services Warehouse on Technology Blvd in Austin. The range is in a 40ft by 40ft room off the main warehouse floor and currently implements the use of two J.L. Shepherd model 28-6A collimated beam calibrators.

One calibrator originally contained a Cesium-137 source of 120 mCi (4.44 GBq). Source output was verified by the manufacturer to be 40.9 mR hr<sup>-1</sup> (1.055E-5 C kg<sup>-1</sup>hr<sup>-1</sup>) on August 31, 1989 utilizing the 45° collimator. This reading was taken using an MDH Industries model 2025 X-ray Monitor, calibrated by National Institute of Standards and Technology (NIST), report no. DG8640/87. This is in close agreement (3.2%) with a calculated exposure rate of 39.6 mR hr<sup>-1</sup> (1.022E-5 C kg<sup>-1</sup>hr<sup>-1</sup>) from a 120 mCi source.

Subsequent measurements made by the DSHS's personnel on October 3, 1991, using Victoreen R chambers (traceable to NIST test no DG8953/89), produced an average, measured exposure rate 37.9 mR hr<sup>-1</sup> (9.78E-6 C kg<sup>-1</sup>hr<sup>-1</sup>) with the 45° collimator. The calculated field based on the activity of source as of 10/8/91 would be 37.72 mR hr<sup>-1</sup> (9.73E-6 C kg<sup>-1</sup>hr<sup>-1</sup>). The difference between the calculated and measured numbers is 0.5%. The expose rate is checked at least bi annually using Fluke electrometer calibrated to NISR standards.

The other calibrator originally contained a Cesium-137 source of 1.2 Ci (44.4 GBq). Source output was verified by the manufacturer to be 312 mR hr<sup>-1</sup> (8.05 C kg<sup>-1</sup>hr<sup>-1</sup>) on December 6, 1998, utilizing the 30° collimator. This reading was taken using an MDH Industries model 2025 X-ray Monitor, calibrated by NIST, report no. DB917/114. This is in agreement with a calculated exposure rate of 396 mR hr<sup>-1</sup> (1.022E-4 C kg<sup>-1</sup>hr<sup>-1</sup>) from a 1.2 Ci source. Since the source is 10 times stronger than the previous source the beam edges for the 10 and 30 degree collimators are marked on the floor.

In 2021 the CDV-784 calibrator that originally contained a Cesium-137 source of 130 Ci. Source output was verified by Civil Defense program to be 130 Ci on October 25, 1983 was transferred to Bionomics for disposal.

### **CALIBRATION PERSONNEL**

The individual who will supervise the instrument calibration will have experience in general health physics, the handling of sealed sources, operation of calibrators, operation of test equipment and the use and maintenance of the survey meters to be calibrated.

### **CONDITIONS OF CALIBRATION**

Calibrations may be carried out in several ways:

- (1) By national standards laboratories using calibration standards of the highest possible accuracy.
- (2) By major government, academic, research or industrial laboratories using institutional standards established by careful comparison with a national standard.
- (3) By other groups using working standards (reference instruments) of lesser accuracy that are periodically calibrated by comparison with one of the above-mentioned national or institutional standards (ICRU 1976).

The calibration method described in this procedure falls into the third category.

All calibrations will be conducted within the temperature range 25±10°C (ANSI 1978). Additionally, no correction will be made for temperature or air pressure when calibrating ionization chamber instruments which operate at atmospheric pressure. The temperature and air pressure at the time of calibration will be noted on each calibration record and can be used by the inspectors in order to determine actual exposure rates when making measurements in the field (see attached air density correction table). Each inspector may apply this correction factor to normalize the reading to the standard conditions of calibration, then apply the correction factor appropriate for the temperature and air pressure to the corrected reading obtained at the time and date of his survey in order to obtain a more accurate measurement. Or the inspector may choose to apply the actual reading without making adjustments for variations over a reasonable range in temperature and air pressure.

Although “free space geometry should be achieved for photon... instrument calibration” (ANSI 1978), some contribution from scatter will occur due to the physical constraints imposed by available facilities and equipment. Tests have been conducted at DSHS in order to ascertain the effects of scatter from collimation, surrounding surfaces and supporting materials. No discernible effects were noted<sup>4</sup>.

The current activity of the source is calculated as a minimum semiannually. Using the inverse square relationship distances are then calculated in order to obtain a one quarter and three quarter scale reading on each scale of each instrument. Some scales may not be calibrated or may only have a single calibration point. The calibration reports will be annotated accordingly<sup>5</sup>. Remote GM detectors will be calibrated with the long axis of the detector perpendicular to the central axis of the beam.

If the detector has a window, the window will be closed during calibration. Other GM detectors such as end window or pancake types will not routinely be calibrated for photon radiation fields. Instruments with internal detectors or chambers will be calibrated with the instrument facing the source of radiation, and the chamber's or detector's center at the distance from the source designated as the calibration point and with the center of the detector or chamber within a few centimeters of the central axis of the beam in the vertical and horizontal planes. In all cases calibrations will be performed in such a manner that the sensitive volume of the detector or chamber is fully encompassed by the beam<sup>6</sup>.

A calibration shall consist of a comparison of the instrument's response to a known radiation field at two points on each scale. If an adjustment to the instrument is needed, it will only be made at one of these points. Should the instrument not respond to within  $\pm 10\%$  of the second reading on that scale when checked in the appropriate radiation field, it will be replaced and scheduled for maintenance and/or repair. It should be noted that the error in the reading only relates to the error allowed between the calculated radiation field and the response of the instrument. It does not include the error in the calculation, the error in measurement of the distance, the error in any instrument used to measure the exposure rate or the error in the primary standard. If care is taken, however, the sum of these “unexpressed” errors should not exceed 10% (IAEA 1971).

The high voltage will not be checked; modern power supplies should generally be capable of providing stable high voltages to within a few per cent or better (IAEA 1971). Nor will an electronic calibration (a check of the linearity of the scale of the rate meter) be performed as part of routine calibration procedures. If an instrument cannot be calibrated within specification in the appropriate radiation fields, then it will be replaced and sent for maintenance and/or repair.

<sup>1</sup> Ludlum Measurements, Instruction Manual Model 12s Miro R Meter, Section 6- Maintenance, 1999

<sup>2</sup> Eberline, RO-20 Ion chamber Technical Manual, Section 4- Maintenance, 1995

<sup>3</sup> Eberline, RO-20 Ion chamber Technical Manual, Section 4- Maintenance, 1995

<sup>4</sup> Meyer, R. 2<sup>nd</sup> Correction to Memo re: Estimate of Error for Calibration Procedures, Internal Memo from Russ Meyer to Richard Ratliff, Texas Department of Health, Bureau of Radiation Control, dated November 20, 1991

<sup>5</sup> Texas Department of Health, Bureau of Radiation Control. Regulatory Guide 5.2, Guide for the Preparation of Survey Instrument Calibration Applications, 1982

<sup>6</sup> Texas Department of Health, Bureau of Radiation Control, Regulatory Guide 5.2, Guide for the Preparation of Survey Instrument Calibration Applications, 1982

## PROCEDURES FOR SPECIFIC INSTRUMENTS

**LUDLUM MODEL 14-C GEIGER COUNTER**

This instrument will be calibrated only with the remote GM detector Models 44-6 or 44-38 series. The calibration will be carried out in the manner specified in the general section entitled Conditions of Calibration. Only one point will be checked on the x0.1 and x1000 (internal detector) scales. Ludlum model 14Cs currently in use by the Bureau come with three different meter faces. Meter faces can be distinguished by the location of the x100 scale in comparison with the other two scales. There are two Calibration Record sheets available to document the calibration of the instrument, one sheet is use if the x100 scale is in the middle of the face plate and the second is used otherwise.

**LUDLUM MODEL 12S or 19 MICRO METER**

This instruments calibration will be carried out in the manner specified in the general section entitled Conditions of Calibration. Contrary to recommendations by the manufacturer no attempt will be made during **routine** calibration procedures to calibrate each range with a pulser or establish a voltage plateau.

**LUDLUM MODEL 2241 SCALER AND RATEMETER**

This instrument will be calibrated with the remote GM detector Models 44-38 series. The calibration will be carried out in the manner specified in the general section entitled Conditions of Calibration. A minimum of three decades will be checked covering a range of 5 to 500 Roentgens per hour. The high range detector will be calibrated over a range of 3 decades and will have at least one of the reading be greater than one Roentgen per hour. The 1x1 sodium iodide detector will be calibrated at a minimum of three points over a range of 20 to 2000 micro-Roentgens per hour.

**RADeCO MODEL H809 LOW VOLUME AIR SAMPLERS**

Calibration only occurs at a flow rate of two cubic feet per minute. All samples will be collected at this flow rate. The instruments used to calibrate the RADeCO model H810 air samplers are either the RADeCO model 812 and/or 828 calibrators. These are returned to the manufacturer once a year for calibration.

**RADeCO MODEL H810 LOW VOLUME AIR SAMPLERS**

Routine calibration verifies a flow rate of two to four cubic feet per minute. If routine calibration is not within ten percent of the calibrators value, the sampler will be calibrated in accordance with technical manual to low value of up to one cubic foot per minute and a high value not to exceed ten cubic feet per minute. The instruments used to calibrate the RADeCO model H810 air samplers are either the RADeCO model 812 or 828 calibrators. These are returned to the manufacturer once a year for calibration.

**LUDLUM MODEL 77-3**

This instruments calibration will be carried out by manufacturer or other certified calibration vender since CDV-784 is no longer available for use.

**LU DLUM 9DP**

Calibration and maintenance procedures for the Ludlum pressurized ion chambers are currently in the process of being developed. At the present time instruments should be sent to manufacturer for calibration and maintenance. Prior to shipping ion chamber should be depressurized using manufacturers procedure.

**EBERLINE RO-20 & RO-2**

Calibration and maintenance of the Eberline Ion chambers should be performed as outline in the instruments Technical manual with the exception that two points will be check on each scale when possible

**E-600 SCALER AND RATEMETER WITH SPA-8 PROBE**

The E-600 is entirely controlled by its microprocessor, its probe voltage and detection thresholds are directly set by output of the processor chip. Calibrating and configuring this instrument is accomplished from a program which runs on a host computer and communicates with the E-600 via a serial data link. Refer to the technical manuals supplied with the host program and instrument for detailed information on calibration.

American National Standard Institute(ANSI), Radiation Protection Instrumentation Test and Calibration, ANSI N323-1978, The Institute of Electrical and Electronics Engineers, Inc., New York, NY, 1978

American National Standard Institute(ANSI), Performance Specifications for Health Physics Instrumentation, ANSI N42.17A, 1989

International Atomic Energy Agency (IAEA), Handbook on the Calibration of Radiation Protection Monitoring Instruments, Technical Reports Series No. 133, Vienna, Austria, 1971

International Atomic Energy Agency (IAEA), Calibration of Radiation Protection Monitoring Instruments, Safety Reports Series No. 16, Vienna, Austria, 2000

International Commission on Radiation Units and Measurements (ICRU), "Radiation Protection Instrumentation and Its Application", ICRU report 20, Washington, DC, 1976

Knoll, G. F., Radiation Detection and Measurement, 2<sup>nd</sup> edition, Wiley, New York, NY, 1989

**Appendix B-16****Question 19**

License Number	Name	Action
L05284	ISORX Texas	Add authorization for production cyclotron
L04274	Allens Nutech Inc	Add authorization for the NorthStar RadioGenix System. Add authorization for the Eckert & Ziegler GalliaPharm Ge-68/Ga-68 generator
L05077	Red River Pharmacy Services Inc	Add authorization for NorthStar RadioGenix System
L05947	UT Southwestern Med Center at Dallas	Add GammaPod
L06973	Tyler Regional Hospital	Add GammaTile
L02807	Solvay	Complex multiyear decommissioning with revised decommissioning plan
L05436	Trace Life Sciences (Kensington/USR)	Decommissioning plan review. Current decommissioning is stalled in litigation
L00248	University of Texas at Arlington	Renewal
L00448	Texas A&M University	Renewal
L00466	The University of Texas MD Anderson Cancer Center	Renewal
L00485	The University of Texas at Austin	Renewal
L00650	Memorial Hermann Hospital System	Renewal
L00680	Baylor College of Medicine	Renewal
L01536	Texas Tech University	Renewal

License Number	Name	Action
L01586	Texas Health Presbyterian Hospital of Dallas	Renewal
L06331	The Methodist Hospital Research Institute	Renewal
L06949	The University of Texas at Austin Dell Medical School	Renewal
L06551	Circle Z Pressure Pumping	Chapter 7 Bankruptcy
L06440	Texas General Hospital	Chapter 7 Bankruptcy
L06859	BJ Services	Chapter 11 Bankruptcy
L06130	Crossroads Health Center	Chapter 11 Bankruptcy
L05323	Hexion Inc	Chapter 11 Bankruptcy

### Appendix C-1 Question 27

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
2007-3	Requirements for Expanded Definition of Byproduct Material  Parts 20, 30, 31, 32, 33, 35, 61, 150  72 FR 55864	11/30/2010	Final ML15078A299   Revised Final ML15300A187   Revised Final ML16076A353   Revised Final ML18234A459	Comments 05/26/2015 ML15078A285   Comments 02/08/2016 ML15300A167   Comments 06/16/2016 ML16076A350   Comments 10/16/2018 ML18234A448	Language from 10CFR31.5(c)(13)(i) concerning one address per registration was added as 289.251(g)(4) on 9/21/2018
2018-1	Medical Use of Byproduct Material – Medical Event Definitions, Training and Experience, and Clarifying Amendments  Parts 30, 32 and 35	01/14/2022	Proposed ML21182A354	Comments 07/29/2021 ML21182A323	The comments were addressed in the January 2022 Adopted version of §289.256.
2018-3	Miscellaneous Corrections  Parts 1, 2, 34, 37, 50, 71, 73, and 140	07/30/2022	Proposed ML21182A354	Comments 07/29/2021 ML21182A323	The comments were addressed in the March 2015 version of §289.255 and the January 2022 version of §289.257.

RATS ID	NRC Chronology Identification	Date Due for State Adoption	Incoming Letter	Outgoing Package	Notes
N/A	10 CFR 34 and 39 Not Associated with a Specific RATS	N/A	Final ML113340070	Comments 01/11/2012 ML113550343	The comments were addressed in the March 2015 version of §289.255
N/A	10 CFR 20, 30, 31, 32, 35, 70 and 71 Not Associated with a Specific RATS	N/A	Proposed ML14258B117  Final ML15078A299	Comments 12/16/2014 ML14258A158  Comments 05/26/2015 ML15078A285	Comments are regarding 10 CFR Parts 20.1403, 20.1405 and 31.12(c)(4).  §289.202(ddd) and (ddd)(3) is compatible with 10 CFR Parts 20.1403.  §289.202(ddd) has paragraph (5) that is compatible with the requirements of 10 CFR 20.1405.  §289.251(f)(4)(K)(iii)(V) is compatible with 10 CFR 31.12(c)(4).

## Appendix C-2 Question 29

SSD number	Manufacturer	Product type or use	Date issued	Type of action
TX-0642-D-104-B	THERMO FINNIGAN LLC	N Ion Generator	3/7/2018	amendment
TX-0586-D-114-G	SCHLUMBERGER TECHNOLOGY CORPORATION	Chromatography	4/23/2018	amendment
TX-1422-D-101-G	NEOTEK ENERGY INC	D Gamma Gauge	5/17/2018	amendment
TX-0634-D-900-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	5/18/2018	amendment
TX-0634-D-906-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	5/25/2018	Inactivate SSD
TX-1488-D-101-G	HAIMO AMERICA INC	D Gamma Gauge	5/30/2018	Initial SSD Registration
TX-0634-S-109-S	THERMO PROCESS INSTRUMENTS LP	H General Neutron Source	6/5/2018	amendment
TX-0634-S-907-S	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	6/5/2018	Inactivate SSD
TX-0167-S-102-S	BRK BRANDS INC	P Ion Generator	6/26/2018	amendment
TX-0634-D-908-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	8/10/2018	Inactivate SSD
TX-0634-D-909-S	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/11/2018	Inactivate SSD
TX-0634-S-910-S	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/11/2018	Inactivate SSD
TX-0634-D-911-S	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/14/2018	Inactivate SSD
TX-0634-D-912-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/19/2018	Inactivate SSD
TX-0634-D-913-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	10/19/2018	Inactivate SSD
TX-0586-D-114-G	SCHLUMBERGER TECHNOLOGY CORPORATION	D Gamma Gauge	10/29/2018	amendment
TX-1351-D-101-B	FMC TECHNOLOGIES INC	D Gamma Gauge	11/28/2018	amendment
TX-0586-S-107-S	SCHLUMBERGER TECHNOLOGY CORPORATION	F Well logging	2/5/2019	amendment
TX-1492-D-101-S	GEOTEK CORING INC	D Gamma Gauge	2/11/2019	Initial SSD Registration
TX-0634-D-914-B	THERMO PROCESS INSTRUMENTS LP	U X-ray Fluorescence	2/28/2019	Inactivate SSD
TX-0634-D-915-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	4/25/2019	Inactivate SSD
TX-0634-D-918-S	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	4/25/2019	Inactivate SSD
TX-0634-D-917-B	THERMO PROCESS INSTRUMENTS LP	U X-ray Fluorescence	5/6/2019	Inactivate SSD
TX-0634-D-919-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	5/23/2019	Inactivate SSD
TX-1176-D-102-G	MICRO MOTION INC	D Gamma Gauge	5/25/2019	amendment
TX-0634-D-920-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	6/6/2019	Inactivate SSD
TX-0634-D-921-B	THERMO PROCESS INSTRUMENTS LP	T Other	6/11/2019	Inactivate SSD
TX-0634-D-922-S	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	6/18/2019	Inactivate SSD
TX-0586-D-114-G	SCHLUMBERGER TECHNOLOGY CORPORATION	D Gamma Gauge	8/1/2019	amendment
TX-0634-D-923-S	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/3/2019	Inactivate SSD
TX-0634-D-924-S	THERMO PROCESS INSTRUMENTS LP	G Portable Moisture Density	9/3/2019	Inactivate SSD
TX-0634-D-925-S	THERMO PROCESS INSTRUMENTS LP	U X-ray Fluorescence	9/4/2019	Inactivate SSD
TX-0634-D-926-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/5/2019	amendment
TX-0634-D-927-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/5/2019	Inactivate SSD
TX-0634-D-928-B	THERMO PROCESS INSTRUMENTS LP	H General Neutron Source	9/9/2019	Inactivate SSD
TX-0628-D-898-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	9/11/2019	Inactivate SSD
TX-0634-D-929-S	THERMO PROCESS INSTRUMENTS LP	U X-ray Fluorescence	9/12/2019	Inactivate SSD
TX-0634-D-930-B	THERMO PROCESS INSTRUMENTS LP	E Beta Gauge	9/12/2019	Inactivate SSD

SSD number	Manufacturer	Product type or use	Date issued	Type of action
TX-1488-D-101-G	HAIMO AMERICA INC	D Gamma Gauge	10/7/2019	amendment
TX-1328-D-101-S	NUCLEAR SCANNING SERVICES INC	T Other	11/25/2019	amendment
TX-1247-D-103-G	ONESUBSEA PROCESSING INC	D Gamma Gauge	12/17/2019	Initial SSD Registration
TX-1328-D-101-S	NUCLEAR SCANNING SERVICES INC	T Other	12/19/2019	Correct Error
TX-0508-D-814-S	NUCLEAR SOURCES AND SERVICES INC	D Gamma Gauge	2/14/2020	Inactivate SSD
TX-0508-S-813-S	NUCLEAR SOURCES AND SERVICES INC	F Well logging	2/14/2020	Inactivate SSD
TX-0634-D-900-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	2/26/2020	Correct Error
TX-1488-D-101-G	HAIMO AMERICA INC	D Gamma Gauge	3/17/2020	amendment
TX-1198-D-801-S	SUPERIOR ENERGY SERVICES LLC	F Well logging	3/23/2020	Inactivate SSD
TX-1363-D-101-S	PROBETECHNOLOGY SERVICES INC SCHLUMBERGER TECHNOLOGY CORPORATION	F Well logging	3/30/2020	Initial SSD Registration
TX-0586-D-805-G		D Gamma Gauge	4/13/2020	Inactivate SSD
TX-8328-S-801-S	ECKERT & ZIEGLER ISOTOPE PRODUCTS	X Medical Reference Source	4/20/2020	Inactivate SSD
TX-8328-S-802-S	ECKERT & ZIEGLER ISOTOPE PRODUCTS	X Medical Reference Source	4/20/2020	Inactivate SSD
TX-8328-S-803-S	ECKERT & ZIEGLER ISOTOPE PRODUCTS	X Medical Reference Source	4/20/2020	Inactivate SSD
TX-1020-D-101-S	PERFORMANCE MATERIALS NA INC SCHLUMBERGER TECHNOLOGY CORPORATION	D Gamma Gauge	5/7/2020	amendment
TX-0586-D-805-G		D Gamma Gauge	5/14/2020	Correct Error
TX-8328-S-801-S	ECKERT & ZIEGLER ISOTOPE PRODUCTS	X Medical Reference Source	5/28/2020	Correct Error
TX-8328-S-802-S	ECKERT & ZIEGLER ISOTOPE PRODUCTS	X Medical Reference Source	5/28/2020	Correct Error
TX-8329-S-801-S	ISOSTAR TEXAS INC	V General Medical Use	6/11/2020	Inactivate SSD
TX-8330-D-801-S	SOUTHWEST BIO-MEDICAL SYSTEMS	V General Medical Use	8/24/2020	Inactivate SSD
TX-1176-D-102-G	MICRO MOTION INC	D Gamma Gauge	9/8/2020	amendment
TX-0734-D-105-G	TRACERCO	D Gamma Gauge	10/15/2020	amendment
TX-0634-D-900-B	THERMO PROCESS INSTRUMENTS LP	D Gamma Gauge	10/21/2020	Correct Error
TX-0734-D-104-S	JOHNSON MATTHEY INC	D Gamma Gauge	10/26/2020	amendment
TX-1247-D-103-G	ONESUBSEA PROCESSING INC	D Gamma Gauge	1/21/2021	Correct Error
TX-0303-S-804-S	GAMMATRON INC SCHLUMBERGER TECHNOLOGY CORPORATION	T Other	3/10/2021	Inactivate SSD
TX-0586-D-115-S	SCHLUMBERGER TECHNOLOGY CORPORATION	F Well logging	4/23/2021	amendment
TX-0586-D-114-G		D Gamma Gauge	5/2/2021	amendment
TX-0303-S-805-S	GAMMATRON INC	T Other	6/7/2021	Inactivate SSD
TX-1328-D-101-S	NUCLEAR SCANNING SERVICES INC	T Other	6/17/2021	amendment
TX-1247-D-102-G	ONESUBSEA PROCESSING INC	D Gamma Gauge	10/8/2021	amendment
TX-0734-D-104-S	JOHNSON MATTHEY INC	D Gamma Gauge	10/21/2021	amendment
TX-1247-D-103-G	ONESUBSEA PROCESSING INC	D Gamma Gauge	10/27/2021	Correct Error
TX-0426-D-108-G	LUDLUM MEASUREMENTS INC	D Gamma Gauge	10/28/2021	Initial SSD Registration
TX-0303-S-102-S	GAMMATRON INC	D Gamma Gauge, F Well logging, H General Neutron	11/9/2021	amendment
TX-0303-S-806-S	GAMMATRON INC	F Well logging	11/9/2021	Inactivate SSD
TX-0303-S-807-S	GAMMATRON INC	F Well logging	11/9/2021	Inactivate SSD
TX-0303-S-102-S	GAMMATRON INC	D Gamma Gauge, F Well logging, H General Neutron	11/17/2021	Correct Error
TX-8260-S-803-S	GNI INCORPORATED	T Other	12/2/2021	Inactivate SSD

SSD number	Manufacturer	Product type or use	Date issued	Type of action
TX-8260-S-804-S	GNI INCORPORATED	T Other	12/7/2021	Inactivate SSD
TX-8260-S-805-S	GNI INCORPORATED	T Other, I Calibration	12/7/2021	Inactivate SSD
TX-8260-D-806-S	GNI INCORPORATED	A Industrial Radiography	12/10/2021	Inactivate SSD
TX-8260-S-807-S	GNI INCORPORATED	T Other	12/21/2021	Inactivate SSD
TX-8260-S-808-S	GNI INCORPORATED	T Other	12/16/2021	Inactivate SSD
TX-8260-S-809-S	GNI INCORPORATED	F Well logging	12/21/2021	Inactivate SSD
TX-8260-S-807-S	GNI INCORPORATED	A Industrial Radiography	12/22/2021	Inactivate SSD
TX-8260-S-808-S	GNI INCORPORATED	T Other	12/16/2021	Inactivate SSD
TX-8260-S-809-S	GNI INCORPORATED	F Well logging	12/21/2021	Inactivate SSD
TX-8260-S-810-S	GNI INCORPORATED	A Industrial Radiography	12/22/2021	Inactivate SSD
TX-8260-S-811-S	GNI INCORPORATED	A Industrial Radiography	1/12/2022	Inactivate SSD